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THE MILITARY SURGEON



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VOL. XLVI

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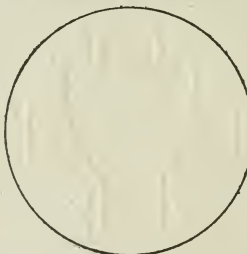
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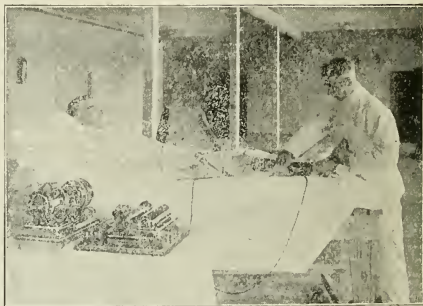
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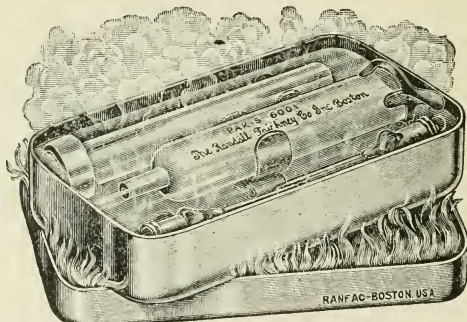
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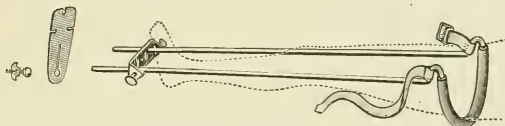
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NUMBER 6

PREPAREDNESS OF THE MEDICAL DEPARTMENT OF THE NAVY FOR WAR AND MEDICAL DEPARTMENT ACTIVITIES DURING THE WORLD WAR

BY REAR ADMIRAL WILLIAM C. BRAISTED

Medical Corps, United States Navy, Surgeon General of the Navy

THE work of the Medical Department of the Navy in the World War has so often been the subject of favorable comment by experts and by others who were brought intimately into a position to observe its activities that it would seem permissible at this time not to undertake to demonstrate that the Department was prepared for war, but rather to review briefly the story of the constant thought which was and must be given in time of peace, in the every day affairs of this branch of the naval service to the possibility of great and sudden emergency. Such a review will serve a useful purpose if it leads to a more general realization of the vast amount of work, much of it requiring years of patient labor and continual training of personnel that is necessary if the organization of the Medical Department is to withstand without strain and disastrous delay the initial violent efforts to mobilize the Navy for immediate action. The dangers of disease and the likelihood of great loss of life are unavoidable concomitants of a sudden outbreak of war.

Early in 1918 a careful investigation of the conduct of the Navy in war was made by a sub-committee of the House Committee on Naval Affairs. The report of that committee reads in part as follows:

The first battle of the war, that against disease, was fought and won by the Medical Department of the Navy. After diplomatic relations with Germany were broken in February, 1917, recruits, we find, streamed into the service in increasing numbers, and in April there was grave danger that the overwhelming influx of volunteers would overtax all training stations and receiving ship facilities and bring disaster to the Navy at the very beginning of the war by the introduction and spread of epidemic diseases which unfortunately were widely prevalent throughout the country at that time. In spite of all the difficulties in the way of rapid expansion and the sudden necessity for the training of new medical personnel and hospital corpsmen, the health of the Navy has been even better than in peace times.

The Medical Department facilities have undergone tremendous development everywhere. The excellent and finely equipped base hospitals which were built before the war, have been greatly expanded with a speed which could not have been

attained if the organization of the Medical Department as a whole had not been carefully thought out long before war came and plans perfected for the immediate enlargement of base hospitals and the construction of emergency hospitals of the finest type wherever necessary. The total bed capacity of naval hospitals was thus increased in a period of a few months from 3800 to more than 15,000 beds. The mothers of the country can rest assured that in these hospitals their sons will receive excellent care and nursing and the most skilled treatment that modern medical and surgical knowledge permits. The Navy Nurse Corps, comprising women of the highest type in the nursing profession has been increased to more than 700.

On board ship and at naval stations the health of the men is protected by all the safeguards known to preventive medicine. The Hospital Corps, upon which falls exclusively the nursing of the sick and wounded outside of hospitals, has been increased from 1,500 to nearly 9,000. Hospital Corps training schools have been established in connection with the training stations at San Francisco, Great Lakes, Newport (R. I.) and Hampton Roads. In these schools young men of good character and aptitude are intensively trained for their duties at sea.

Foreseeing that the hospital ship now under construction would not be completed in time to meet the war needs of the service, two large liners were secured and converted into hospital ships to supplement the work of the hospital ship *Solace*.

Admiral Braisted arranged that the transports operated by the Navy should have ample Medical Department facilities and necessary equipment, and so far as naval facilities exist, has assumed responsibility for the medical and surgical care of all Army sick and wounded who may be transported home on naval vessels from Europe.

For the care of our naval forces in England, France and European waters three base hospitals are already in operation abroad.

In expanding the Medical Department to meet the present and future needs of the Navy, we were glad to find that the needs of the increasing numbers of industrial workers and other civil employes in the large manufacturing plants and navy yards had not been overlooked. The peace-time humanitarian work is also being continued in connection with Haiti, Santo Domingo, Virgin Islands, Samoa and Guam, involving a population of over 2,000,000 people.

The report concludes with the statement, "It may well be said that the reason for this successful record is to be found in the bureau's preparedness, due to foresight and coöperation."

In the early months of the war when the medical members of the Council of National Defense were studying our organization and work they repeatedly expressed admiration of the smoothness of operation and the celerity with which large undertakings were accomplished. In fact they and others competent to judge were of opinion that there was no finer medico-military organization in the world at the outbreak of war than that of the United States Navy.

For a true perspective of medical department preparedness it is necessary to go back several years. It is our business at all times to prepare for war. Long before events suggested the probability of war among European nations, preparations for war—any war—were going on steadily. Owing to Surgeon General Rixey's foresight I was sent to

Japan during the Russo-Japanese War as medical observer to gather information that might be utilized in our own preparations. Much was learned during my year of study in Japan and the knowledge gained proved to be of the greatest value. In the years previous to the world war the vivid preconceptions of war and all that war means, formed as a result of that experience, were of the greatest help to me in looking forward to the possibility of war.

Upon returning from Japan I assisted Surgeon General Rixey in his vigorous policy of enlarging, extending and modernizing our chain of base hospitals. He accomplished a great deal not only in this direction but in the improvement of conditions relating to personnel as well, and from his time forward the Medical Department has been engaged in unremitting efforts to prepare for any eventuality in so far as the public interests and the judgment of the people permitted.

The subject of medical department preparedness for war may be considered under the following headings:

1. Organization.
2. Personnel.
3. Hospitals, hospital ships and other provisions for the care of the sick and wounded.
4. Material equipment: Medical and surgical supplies; medical and surgical equipment.
5. Preventive medicine and sanitation.
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The Medical Department must be organized in time of peace in such a way that rapid expansion can take place without any change in the scheme of organization, without confusion, and without retarding or interfering with routine work, because with mobilization for war there comes a tremendous and sudden increase in the work of the medical department, both in connection with the induction of officer and enlisted material of all ratings into service and on account of an increase in sickness inevitable with an untrained and unseasoned personnel undergoing intensive training. At the same time the new medical department personnel must be trained rapidly. Provision must be made for the care of greatly augmented naval forces in the way of enlargement of base hospital facilities, and plans must be laid in advance to meet all possible contingencies which may arise from the special character of the war.

For several years before this war the most careful consideration was given to matters of organization. Shortages of medical department personnel in relation to the growing peace-time Navy were pointed out and appropriate legislation was recommended. The difficulty of

effecting rapid expansion of the medical corps and of the hospital corps, under the existing conditions of many years standing, was clearly recognized.

The hospital corps of the Navy is peculiar to the United States Navy. It was established as such in 1898 and reorganized in 1906. The Nurse Corps, composed of trained women, was established in 1908 as a further step toward preparedness and assurance of the best possible care of the sick and wounded in accordance with modern standards of nursing. The Medical Reserve Corps was created by Act of Congress, August 22, 1912, with a view to paving the way for the rapid mobilization of additional medical officers for active service in case of war.

Before the war complete reorganization of medical department personnel was effected. The distribution of medical officers on a fixed basis took place with proper distribution in grade and rank so that when war came it was only necessary to take in the additional personnel as rapidly as required to keep pace with the growing strength of the Navy. Similar changes in the hospital corps were also brought about.

In these particular features of organization more was accomplished in this period of reorganization than had been accomplished in the whole previous history of the Medical Department. Secretary Daniels was deeply interested in the legislation necessary to secure these results, realizing not alone what it would mean in peace time but especially in the event of war.

In 1918 the members of the Medical Reserve Corps were listed for mobilization in accordance with their expressed willingness to serve in case of war, and a correspondence course was established for their education in naval matters. A similar course was provided for medical officers of the naval militia. Later, when the Medical Reserve Force was created by Act of Congress, August 29, 1916, because of the rapidity with which medical officers could in this way be inducted into service and obligated to perform any duty, enrollment in the Reserve Force was carried on in preference to appointment in the Medical Reserve Corps which was subsequently abolished. The physical records of retired medical officers were studied with a view to determining those who might be available for active service, and mobilization points were designated for those selected. These officers actually reported for duty the day war was declared, in response to telegraphic orders.

In view of the Act of Congress of July 1, 1902, which authorized the President to employ the Public Health and Marine Hospital Service in time of threatened or actual war, for service under the Army or Navy, plans were laid to utilize both the personnel and the hospital facilities of the U. S. Public Health Service in the event of war. The President exercised this authority by Executive Order of April 3, 1917.

With a view to preparing in advance for the active cooperation of the American Red Cross, authority to detail medical officers of the Navy to that organization was requested and granted by Act of Congress, August 29, 1916.

Early in 1916, on the possibility that the United States might enter the World War, an estimate of the situation was made and charts were drawn up to indicate places where medical department personnel would be needed—medical officers, dental surgeons, nurses and hospital corpsmen. All personnel available at that time, including members of the Medical Reserve Corps, retired officers, and medical officers of the Naval Militia, were listed for mobilization.

In October of 1916 the Bureau of Medicine and Surgery made a survey of 144,000 physicians in the United States for the purpose of determining their eligibility for service in the regular medical corps. More than 7,000 of these were individually circularized. In addition, the coöperation of medical colleges was sought. While this work did not lead to an immediate increase in the number of applicants it did familiarize medical men with the service and its needs and resulted in a sufficient number of applications when war came to meet our needs throughout. Early in 1917, with war in prospect, the enrollment of medical and dental officers in the Naval Reserve Force was conducted rapidly by special examiners. The Dental Corps of the Navy was created by Act of Congress, August 22, 1912. This was an important provision and has done much to aid in promoting physical efficiency of the personnel.

Prior to the declaration of war special parties were sent out to recruit for the hospital corps. Hospital corps schools were established at the Naval Training Station, Newport, R. I. (1914) and at the Training Station, San Francisco (1915). A third school was established at Great Lakes in January, 1917, and later, when the Naval Operating Base at Hampton Roads, Va., was ready to begin the training of enlisted personnel, a fourth and finely equipped school was located there.

On July 27, 1915, in accordance with Navy Department confidential instructions dated May 28, 1915, following a letter from the General Board to the Department, the Bureau reported to the Department in detail its plans for rapid expansion of personnel, enlargement of hospitals, construction of hospitals of the emergency type, utilization of Public Health Service hospitals, arrangements to be made for the care of naval patients in civil hospitals where necessary, as well as data concerning the various civil hospitals and the number of beds available. Specifications were presented for the quick conversion of merchant ships to be used as hospital ships, ambulance ships or medical transports. The initial requirements for medical and surgical material and Medical

Department supplies of all kinds were stated and probable requirements for the subsequent periods of a war were discussed together with sources of supply and amounts available with the time necessary for delivery. Detailed plans for the purchase, delivery and inspection of such supplies were described.

Thereafter, reports of preparations necessary to insure a state of preparedness for war were made quarterly to the Department. The preparations of the Medical Department progressed without interruption.

In conjunction with the Bureau of Yards and Docks and the Office of Naval Intelligence plans were prepared for the construction of prison camps, and early in 1916 possible sites, including government owned land at Greensborough Neck, Annapolis, Md., were inspected.

In 1916 the war slate for naval districts was revised. Adequate and uniform plans were made for medical department organization in each district. A survey of hospitals and other institutions which could be converted into hospitals, was completed and the institutions were listed according to naval districts. Naval hospital base units were organized under the auspices of the American Red Cross which also undertook the development of nursing units and the enrollment of graduate nurses for service in the Navy. Early in 1917 district organization was completed. The medical department was divided into two general classes, (a) Division of Dispensary Service (field and local service) and (b) Hospital Service (central). A senior medical officer was detailed as Medical Aid to the Commandant of each Naval District to supervise all medical department activities in the district other than those belonging to the Hospital Service. The Medical Officer in command of the Naval Hospital was designated as Director of Hospital Service in charge of the Naval Hospital Base, with supervision of the care of all patients transferred to hospital. His duties included arrangements with civil institutions for the care of navy patients when necessary; general supervision over their care and treatment under such circumstances, and development of naval base hospital facilities to meet growing needs. His duties required coöperation with the Medical Aid to the Commandant for the complete coördination of all medical department activities under close supervision of the Bureau of Medicine and Surgery.

General expansion of naval hospital facilities began in 1909 with the construction of permanent buildings of the finest type at Portsmouth N. H., Chelsea, Mass., Newport, R. I., and at Puget Sound together with the enlargement and modernizing of the hospitals at Norfolk, Philadelphia, New York, and Mare Island. The hospitals at Annapolis, Md.,

and Washington, D. C., were begun in 1904. All of these main hospitals on both coasts were designed to serve as hospital bases, and they were definitely planned so that the capacity of each could be increased rapidly by the use of tents or construction of temporary wards should occasion require. Special provision was made late in 1916 for enlargement of the naval hospitals at New York, Norfolk, Mare Island, Puget Sound, and Pearl Harbor.

Plans had been drawn in 1913 for hospitals of an emergency type. Small scale plans with specifications were completed in June, 1913. These covered buildings comprising a complete hospital unit to be set up wherever the need for additional hospitals might be demonstrated in the event of war. The plot plans of certain naval hospital reservations were also laid out so that drawings would be available in case of war to show exactly where ward buildings of the emergency type were to be erected.

The emergency hospitals were designed so that each could be increased from a small unit to a total of 5,000 hospital beds if necessary. The plans were very carefully worked up from a study of hospital camp conditions and the probable needs of the Navy. Later developments proved that the original layouts would have been entirely satisfactory. However, when the United States entered the World War it was found that owing to the shortage of lumber of certain dimensions, material could be obtained more readily and that construction would proceed more rapidly and economically if the plans were modified. The 500 bed camps constructed in the early months of the war were all comprised of one story buildings whereas the original plans called for two-story ward buildings. Some improvements were made in the later hospitals but it may be said of all that no finer hospitals of an emergency type could be expected, and in certain respects, so far as the comfort and treatment of patients is concerned, they were even superior to the best permanent hospitals.

With the exception of the Naval Hospital at Cape May, N. J., additional construction at New London, Conn., and the unit put up on Ward's Island, New York, all of the emergency hospitals in the United States were built on government owned land.

It is safe to say that when war became imminent the United States had the most magnificent system of naval base hospitals in the world on a peace-time basis, and to meet war conditions it was only necessary to complete the emergency construction already planned. During the year previous to mobilization a large amount of tentage was procured and distributed among the various hospitals to be stowed away in order that a sufficient number of tents might be available for immediate

increase of bed capacity wherever required in case of necessity. Additional hospital beds were also supplied so that by utilizing extra space in hospital buildings not ordinarily needed for beds, as well as in tents, the bed capacity of these base hospitals could be increased nearly 100 per cent at once. Hospital store rooms were filled with reserve stocks of medical and surgical supplies to meet any demand that might come. Moreover, vessels of the Navy in commission were furnished greatly increased quantities of medical supplies.

Several years before the war the Bureau of Medicine and Surgery began gradually to accumulate medical and surgical supplies and Medical Department equipment generally, in reserve, the aim being to carry at all times in the principal medical supply depot at Brooklyn, excess stocks equivalent to the demands of one peace-time year. When war broke out in Europe this one year's reserve supply was increased by large purchases without waiting for special appropriations because it was realized that the United States was then largely dependent upon Europe for goods of that character and that much time would be required for their manufacture in this country. The necessity for this large reserve supply was explained to the naval committees and specific authorization to proceed with the purchase was secured from Congress in the Naval Act of August 29, 1916. Through this forethought the Medical Department not only had abundant supplies of medical and surgical stores on hand at the beginning of the war, but there were already in force contracts so drawn that the Bureau could purchase without waiting for new bids, and could procure without delay, all stores and equipment needed for the medical outfits of the many additional vessels secured by the Navy Department and converted for naval purposes. In the same manner the new hospitals and the many dispensaries established at numerous training camps and stations were promptly supplied and equipped. Supplies for "overseas" were invariably furnished in the full quantities requested without delay. Important supplies were duplicated and sometimes triplicated by separate shipments to make good in advance possible losses through the sinking of vessels by the enemy. In some instances stores and personnel were assembled and held ready awaiting word from London. Bureau instructions were to furnish anything requested from London at once without waiting for explanation. In no instance during the war was any ship or station delayed in being placed in active service because of the lack of or delay in the shipment of medical and surgical supplies. London headquarters was authorized to purchase abroad in advance of approval any stores or supplies needed.

Because of these preparations the Medical Department passed

quietly from a peace to a war footing on April 6, 1917. A few more clerks and four or five additional officers were taken into the Bureau of Medicine and Surgery but no radical changes in organization were necessary.

I went to the Secretary and explained the necessity for immediate action with regard to emergency hospital construction. He realized the situation and our plans received instant approval.

By authorizing the technical charge of cost against a small contingent appropriation the Secretary made it possible for me to go ahead with our building operations without awaiting the sanction of Congress, of which we felt assured, but which was not actually given until the passage of the Appropriation Act of June 15, 1917. By that time we had under way, and some of it nearing completion, millions of dollars worth of hospital buildings in many places. This prompt action before material and labor costs had advanced saved a great deal of money as well as time. By autumn the first chain of new emergency hospitals was ready for use, including those at League Island, Pa., Charleston, S. C., Cape May, N. J., and Pensacola, Fla. At the same time additional temporary wards were ready for occupancy at Portsmouth, N. H., Newport, R. I., Norfolk, Va., and Great Lakes, Ill., so that the first winter of the war was approached with considerable assurance. A little later, additions were made to the base hospitals at Chelsea, Mass., Philadelphia, Pa., Mare Island, Cal., and Puget Sound, Wash. New hospitals were built at Pelham Bay Park, N. Y., New London, Conn., Hampton Roads, Va., and Key West, Fla. United States naval hospitals were also established in Europe.

In brief, the expansion of naval hospital facilities continued steadily throughout the war to keep pace with the growing strength of the Navy, which finally exceeded 600,000 in total personnel by November, 1918. Eventually, naval hospitals were increased in number from seventeen to forty three; thirteen of which were located in Europe, including five base hospital units which were organized early in the war.

The hospitals abroad were fitted out with the most modern equipment, most of which, such as operating room appliances, laundry machinery, sterilizers, etc., was sent from the United States.

By January 1, 1918, the total bed capacity had increased from 3,850 to 15,689. Before the war was over the number of hospital beds available reached a total of more than 19,000. This figure included our hospitals all over the world and 817 beds in three hospital ships.

About the middle of 1917 in view of the increasing activities of our Navy in the war zone and the realization that these would increase as fast as new personnel could be trained, and also on account of the possi-

bility of a fleet action in which one division at least of the United States fleet would take part with the main British fleet, it was recommended that two base hospitals be established in England or Scotland. This allocation was finally approved abroad and two base hospital units were immediately mobilized. They were held ready pending arrangements for their establishment in the British Isles. The Commanding Officer of one unit was sent abroad to complete arrangements. After some delay a unit was located in Strathpeffer, Scotland, within easy communication with the main fleet and the bases utilized by the North Sea Mining Groups. This hospital was magnificently located and splendidly equipped, and it proved to be of great service to the British Navy as well as to our own forces.

Later the second base hospital unit which had been mobilized and was being held in Philadelphia awaiting orders, was located at Leith, Scotland, near one of the North Sea bases. The third hospital was located at Queenstown, Ireland, where our main patrol fleet was based. The bureau's first recommendation that these hospitals be established at once was disapproved July 18, 1917 by the Commander of United States Naval Forces operating in European waters on the ground that there would probably not be any demand for these base hospitals, at least not within the year. After correspondence relative to the contemplated expansion of our forces operating in European waters and the anticipated delay in locating and commissioning them both hospitals were finally placed in operation. Pending the establishment of a base hospital at Queenstown the bureau recommended that a hospital ship be sent to that port in view of the fact that complements amounting to 12,000 men were to base there on ships and ashore. We had additional personnel located in Ireland at aviation and balloon stations. This plan was rejected abroad on the ground that the harbor was too crowded and a hospital ship was not needed.

Early in the war two base hospital units were established at Brest, France, where they did fine work throughout, one of them exclusively for army patients. The personnel of these units, organized under the auspices of the American Red Cross and enrolled in the Naval Reserve Force under the command of regular medical officers of the Navy, rendered splendid service and are deserving of great credit. Other units were organized but their services were not required. Twenty-five station hospital units consisting of medical and nursing personnel only were organized in conjunction with the American Red Cross to supplement the personnel at naval hospital bases. Ten of these were called to duty and served during the war.

With regard to hospital ships, we had the U.S.S. *Solace* in commission at the beginning of the war and we had a new hospital ship under construction at the Philadelphia Navy Yard designed and planned for the purpose by the Bureau of Construction and Repair in coöperation with the Bureau of Medicine and Surgery. In 1916 the Board of Inspection and Survey having inspected the steamships *Saratoga*, *Havana* and *Mexico* of the New York and Cuban Mail Steamship Company, these vessels were designated to be assigned to the Medical Department in the event of war, and detailed plans were prepared for their quick conversion for hospital ship purposes. At the same time all details relating to their complements and equipment were worked out. Plans had been drawn previously, in 1914, for conversion of the *Havana*, *Mexico*, *Saratoga*, and also of the *Morro Castle*, a somewhat smaller vessel of the same line. For service in the Pacific Ocean the Bureau requested in 1916 that the *Sierra*, *Sonoma* and *Ventura* be designated for conversion into hospital ships. After war was declared the *Havana* and *Saratoga* were converted in accordance with these plans at the New York Navy Yard, the former becoming the U.S.S. *Comfort* and the latter, the U.S.S. *Mercy*. These vessels relieved the *Solace* in taking care of the needs of the Atlantic fleet and they were ready in time to meet other demands. They proved to be excellent hospital ships in so far as merchant ships can be made to serve the purpose.

To go back to the beginning of the war; we had many anxious moments, of course, but on the whole our work went on without confusion. After the declaration of war we received plenty of applications for the medical corps but it was a difficult matter to induct medical officers and train them fast enough to meet the needs of the rapidly expanding Navy. The demand for officers of sufficient experience and training to render them capable of assuming independent duties, was very great, especially as the care of the sick at base hospitals and at training stations and camps was fast becoming a tremendous undertaking owing to the mounting numbers of unseasoned men undergoing intensive training. These not only brought communicable diseases into the service with them from civil communities but they were, like all untrained and undisciplined recruits, peculiarly susceptible to disease.

By shortening the course at the U. S. Naval Medical School, class after class of new medical officers received sufficient preliminary instruction in naval medical matters to fit them for duty at naval hospitals where with practical experience they were rapidly fitted to perform duty at operating stations and at sea. Advantage was also taken of the offers of various medical schools to provide special courses of instruction. Many men of previous training in the various specialties of medicine

rendered splendid service in the Navy along their special lines of work. Some of the most eminent practitioners in the country entered the Naval Reserve Force and served in this way both independently and in connection with hospital units. Medical officers on active duty increased from 353 at the outbreak of war to 3,093 as follows: regular, 829; temporary, 429; reserve, 1,720; retired, 98; acting assistant surgeons, 3; Public Health Service, 16. Dental officers increased from 34 to 485—122 regulars and 363 reserves.

The Hospital Corps of the Navy was increased from 2,000 to 16,564. The urgent necessity of expanding this corps to enormous proportions, at once, presented problems of peculiar perplexity. Fortunately, young men of splendid character and excellent ability entered the corps in large numbers and it was therefore possible to train them much more rapidly than under ordinary circumstances. The establishment of hospital corps schools has already been mentioned. In view of the special training required and the diverse duties which must be performed skillfully by these men the enlargement of the corps fast enough to provide for all needs ashore and afloat, must be regarded as one of the great accomplishments of the Medical Department.

With war imminent the coöperation of the United States Public Health Service was requested by the Secretary of the Navy and assured by the Secretary of the Treasury. Arrangements were then made to take over the medical personnel attached to Coast Guard vessels and for the use of Public Health Service hospitals in case of need.

Shortly after the beginning of the war, in addition to those serving on board coast guard vessels thirteen officers of the Public Health Service including some of their most experienced and expert members were detailed to serve in the Navy during the war. One was assigned to each naval district where he was of the greatest possible assistance to the medical aid to the commandant whom he was able to relieve of a great burden of work in connection with the sanitation of the rapidly growing stations and outlying section bases, and in the enforcement of measures for the prevention and control of disease. This arrangement proved to be a very fortunate one. With the sanitation officer acting as assistant to the medical aid to the commandant, whose time was almost completely consumed with manifold duties relating to the movements of personnel and development of medical department activities for the care of the sick, the medical aid was enabled constantly to keep in touch with conditions in all parts of his district. In this way preventive medicine was completely coördinated with curative medicine. It is believed, therefore, that our plan of district medical organization is beyond criticism.

Two of the most expert officers of the Public Health Service, with wide experience in public health organization and sanitation matters of all kinds, were detailed to the Bureau of Medicine and Surgery and assigned to the Division of Sanitation, organized under the direction of a medical officer of the Navy, who was thus enabled to avail himself at all times of the most competent advice and assistance. Intimate relations were quickly established with the Bureau of the Public Health Service and in this way the staff of the Bureau as well as the personnel at the Hygienic Laboratory were constantly available for purposes of consultation in addition to the staff of the U. S. Naval Medical School.

The Bureau of Medicine and Surgery supervised the work of the Medical Department in the field, and studied the many problems which constantly arose in connection with the expansion of naval stations and the new ones which were being developed. Particular attention was paid to housing and housing standards for barracks and other habitations, water supplies, environmental conditions, and sanitation matters in general, together with measures for the prevention of communicable diseases. The department, and the service at large as well, was informed each week of health conditions in the Navy. Weekly bulletins were issued containing information and instructions for medical officers, many of whom had not had instruction or experience in civil practice along the lines of preventive medicine and sanitation.

During the first year of the war when we were almost swamped with our own work the Secretary sent for me and told me that the Navy would take over the transport service for the Army. For the moment I did not see how we could do more than we were doing but the Secretary said we were all in the war together to win and that I must do everything possible to help General Gorgas.

We went to work on this problem at once and our experience with ship sanitation and medical department organization afloat made it comparatively easy to develop plans for safe-guarding the health of troops in Navy transports and for the installation of ample medical and surgical facilities for these ships as fast as they were turned over to the Navy for alteration. Never in the history of warfare has there been such a movement of troops so well taken care of, their health protected in every possible manner, every detail of sanitation receiving strict attention and elaborate provisions being made for the care of the sick and wounded with special provisions for the safety of the insane. In fact the larger vessels were regarded as combined transports and hospital ships. This work was taken over and performed entirely by the Medical Department of the Navy without extra appropriations and without expense to the Army.

Hospital ships were not to be had because it was decided early in the war that military-naval desiderations precluded the possibility of assigning ships specially for transportation of the sick and wounded. The Bureau of Medicine and Surgery therefore planned accordingly, well in advance of needs, to meet all contingencies with Navy transport facilities. The provisions made proved ample, not only for the care of the casual sick of troops in transit, but for the actual return of 151,649 army sick, wounded, and insane; 4,395 Navy and 3,626 Marine, from the expeditionary forces in France alone. By the time the armistice was signed, plans had been completed for accommodations in Navy transports already in commission, about to be commissioned and under construction to bring back from Europe 30,000 sick and wounded per month. This figure includes 15,000 bed patients. These were the estimated requirements for an army of five million men. Inasmuch as the number of men who reached France did not greatly exceed two million, the figures show how ample the provisions were. Moreover, these accommodations represented but 80 per cent of the total available, 20 per cent having been reserved for naval personnel.

Another undertaking about which not so much has been heard was the work of the Medical Department in connection with the Naval Overseas Transportation Service which eventually included more than 350 cargo vessels. The Medical Department organization for this service alone assumed large proportions.

Much might be said of the work of the Medical Department of the Navy in many parts of Europe. Dispensaries and hospitals were established in the eastern Mediterranean district, at Corfu in Italy, France, Gibraltar and the Azores, to care for the health of United States Naval personnel which in all finally approximated 75,000 officers and men, including Marine forces numbering more than 28,000. Nothing need be said of the Marines except to remind you that in all of their splendid work the Medical Department of the Navy participated. The medical and surgical equipment supplied them was of the highest order and was furnished in advance and in quantities greater than were used.

Among miscellaneous activities the Bureau of Medicine and Surgery did pioneer work so far as the Navy is concerned in making preparations for defense against poison warfare gases, and undertook the instruction of personnel ashore and afloat including marines detailed for France. A laboratory was established early at the U. S. Naval Medical School for the study and future study of warfare gases, and a series of bulletins, both confidential and non-confidential, was issued by the bureau for the instruction of naval personnel. One of these bulletins contained drill regulations. Later, the excellent Navy gas mask was designed by

the Bureau of Construction and Repair in coöperation with the Bureau of Medicine and Surgery.

At the beginning of the war in connection with the prevention and control of communicable diseases the Bureau enlarged and extended the diagnostic laboratories at naval hospitals and established completely equipped laboratories where required to serve naval district needs. At the naval training stations and larger camps laboratories were provided for an extensive range of scientific work and a highly trained laboratory personnel was quickly developed. In addition the U. S. Naval Medical School organized, equipped and trained the personnel of three mobile laboratory units which were dispatched repeatedly upon short notice to various stations to supplement existing facilities or to provide the laboratory measures necessary for the prompt control of such diseases as diphtheria, cerebro-spinal fever, pneumonia, and other carrier-borne diseases. In the early days of the war, as planned in advance, good use was made of the laboratory car of the U. S. Public Health Service. This was during the initial period of expansion at the Naval Training Station, Great Lakes, Ill.

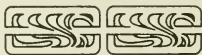
Special preparations were made to care for the dead. Supplies of caskets were procured in advance of the war and stored in naval hospitals, and during the war all transports were furnished with a sufficient number to meet probable needs. Special instruction in embalming was provided for selected members of the hospital corps and rigid instructions were issued throughout the service relative to the care and disposal of the dead. The bureau has received many appreciative letters from bereaved relatives for the pains taken in this respect. At the present time due to preparations in advance we have brought home almost all of our dead from Archangel to Africa with the exception of marines buried in the zone of the Army in France.

For the first year of the war the percentage of sickness and the admission rates for disease were lower than for peace-time years. April 1, 1918, the Bureau was already planning preventive measures for the control of disease to meet conditions of the next winter and was receiving the full coöperation of other Bureaus to that end. The pandemic of influenza in the autumn of 1918 spoiled our record but in spite of the frightfully severe types of pneumonia which accompanied that disease and the deplorable number of deaths, the Navy escaped lightly in comparison with the disastrous consequences of epidemics in many countries including the United States, when it is considered that a large majority of all persons in the Navy were in the age groups that everywhere showed the highest death rates. The death rate of the Navy from disease for the period of the war was 8.8 per annum per thousand of total

strength, the lowest death rate ever recorded for the military or naval forces of the United States in actual war lasting through all seasons of the year.

In looking back, with the record of this war before us, it is extremely doubtful if our work could have been done very differently or any better if it had to be done over again. Both in making provisions for preparedness and during the war the deep interest of the Secretary was very helpful to me. He never failed to approve of my recommendations when our needs were fully placed before him and he helped me to put into effect as promptly as possible everything that could be done to make the work of the Medical Department more effective. Indeed, his advice and suggestions were frequently of the greatest assistance.

In conclusion it should be said that the credit for the successful conduct of the Medical Department of the Navy in the World War belongs in great part to our trained personnel which must be maintained on an adequate basis if there is to be future preparedness for war in time of peace.



PROCEEDINGS OF THE TWENTY-EIGHTH ANNUAL
MEETING OF THE ASSOCIATION OF MILITARY
SURGEONS OF THE UNITED STATES, NEW
ORLEANS, LA., APRIL 22-24, 1920, HOTEL GRUNE-
WALD

MINUTES OF MEETING

The twenty-eighth annual meeting of The Association of Military Surgeons of the United States convened at New Orleans, La., April 22, with Lieut. Col. Joseph A. Hall, M. C., N. G., U. S. (Ohio), in the chair.

The order of procedure was as follows:

Opening Meeting, 9.00 a. m.

1. Report of Executive Council.
2. Appointment of Nominating Committee, Auditing Committee, Committee on Resolutions.
3. Report of Secretary-Treasurer.
4. Boards of Award.
5. Consideration of Amendments to Constitution and By-laws.
6. Address of the President.
7. Addresses:
"Emergency Measures in Malaria Control," Surgeon L. B. Frick, U. S. P. H. S.
"Activities of the Air Medical Service and the Flight Surgeon," Lieut. Col. Robert A. Strong, M. R. C., U. S. A.
8. Miscellaneous Business.

Second Session, 2.00 p. m.

1. Report of Necrology Committee, and Committee on Formation of Local Chapters.
2. Addresses:
"Training of the Enlisted Men of the Medical Department," Lieut. Col. Gustavus M. Blech, M. C., Ill. N. G.
"Some of the Lessons of the War Which are Applicable to Civil Practice," Dr. John Smyth.
"Some Commonly Misapprehended Points in the Diagnosis of Pellagra," Surgeon Joseph Goldberger, U. S. P. H. S.

Third Session, 8.00 p. m.

1. Motion Pictures Illustrating: "Technique Used at the Pennsylvania Hospital in the Treatment of Infections and Infected Wounds with Dichloramine-T"; "The Carrel Technique in the Treatment of Infections of the Bones and Joints."

2. Addresses:

"Chronic Prostatitis and Urethritis Dependent upon Colon Bacillus Infection," Dr. C. E. Verdier.

"Physiotherapy at the U. S. Naval Hospital, New York, N. Y.,"
Capts. C. H. T. Lowndes, F. E. McCullough, A. M. Fauntleroy, M. C.,
U. S. Navy, and Commander William Seaman Bainbridge, M. C.,
U. S. N. R. F.

FRIDAY, APRIL 23

Fourth Session, 9.00 a. m.

1. Addresses:

"Neurologic Service in Naval Hospitals," Lieut. Commander
R. F. Sheehan, M. C., U. S. Navy.

"The Practical Aspects of Trachoma and Its Control," Surgeon
John McMullen, U. S. P. H. S.

"Why a Sanitary Train?" A. A. Surg. Wilbur S. Conkling,
U. S. P. H. S. (read by title).

Fifth Session, 2.00 p. m.

1. Addresses:

"The Founding of This Association and Its Founder as I Knew
Him. An Anecdotal Sketch of Professor Doctor Nicholas Senn,"
Dr. Horace M. Brown.

"The Results of Wound Excision and Suture," Lieut. Col. Martin
B. Tinker, M. R. C., U. S. A.

"The Future of Psychiatry in the Army," Col. T. W. Salmon,
M. R. C., U. S. A.

Sixth Session, 8.00 p. m.

1. Addresses:

"Impressions gathered from the Experiences in the Great War
from the Surgery of the Vascular System," Maj. Rudolph Matas,
M. C., U. S. Army.

"Types of Motor Ambulances Observed Abroad," Capt. F. L.
Pleadwell, M. C., U. S. Navy.

SATURDAY, APRIL 24

Seventh Session, 9.00 a. m.

1. Report of Nominating Committee.

2. Election of Officers.

3. Address:

"Modern Military Medical and Surgical Reconstruction and the
Measures of Coöperation Practiced in Relation to the Federal Board
for Vocational Education, Regarding Discharged Compensable Dis-
abled Soldiers," Col. Frank Billings, M. R. C., U. S. Army.

4. Installation of Officers and Reports of Committees.

5. Unfinished Business.

Adjournment.

The headquarters of The Association were at the Hotel Grunewald, and the meetings were held in the Green Room there.

The meeting was called to order by the president. The following reports were then read by the secretary:

REPORT OF THE EXECUTIVE COUNCIL

During the period, October 1, 1919, to April 21, 1920, there were six meetings of the Executive Council, as follows:

October 12, 1919, meeting held at Army and Navy Club, Washington, D. C.

November 28, 1919, meeting called by mail.

January 6, 1920, meeting called by mail.

January 15, 1920, meeting called by mail.

February 14, 1920, meeting held at Army and Navy Club, Washington, D. C.

April 21, 1920, meeting held at Hotel Grunewald, New Orleans, La.

At the last meeting of the Council, the question of the proposed amendment to the Constitution was considered. The amendment referred to was put before the Association at the last annual meeting with favorable recommendation by the Executive Council. The Executive Council at the last meeting voted to rescind the recommendation to that part of the proposed amendment to the Constitution reading, "Article 3, Section 2: Add as a 6th Classification the following: All Medical Members and Medical Examiners of Local, Medical Advisory and District Boards officially appointed by the President of the United States, the Provost Marshal General of the United States Army and the Governors of the Various States for the purposes of the Selective Draft Act."

The following letter from Col. F. A. Winter, M.C., U.S.A., was read at the last meeting of the Council and upon motion, which was duly seconded, his resignation was accepted.

HEADQUARTERS SOUTHERN DEPARTMENT

OFFICE OF DEPARTMENT SURGEON
FORT SAM HOUSTON, TEXAS

April 5, 1920.

SECRETARY, ASSOCIATION OF MILITARY SURGEONS,
Washington, D. C.

Sir:

I beg to tender my resignation as third vice-president of the Association of Military Surgeons, to take effect immediately.

F. A. WINTER,
Colonel, Medical Corps, U. S. A.

The Council then elected Col. Charles Lynch, M. C., U. S. Army, to succeed Colonel Winter for the unexpired term of his office in accordance with the provisions of the Constitution and By-laws.

REPORT OF SECRETARY-TREASURER

Mr. President, and Members of the Association of Military Surgeons:

I submit herewith a report of the activities of the office of Secretary-Treasurer for the period from October 1, 1919, to April 15, 1920. During the months of Octo-

ber and November, 1919, there was an unusually large number of resignations from the Association, almost all of which fell among those who had come in from the camps at Greenleaf and Benjamin Harrison. Since that time the resignations have been much less, and the number of those applying for membership has been in excess so that with the exception of that period, the progress of the Association has been forward. The figures in regard to the resignations and new members are as follows: Resignations October 1, 1919, to April 15, 1920, 322; new members, October 1, 1919, to April 15, 1920, 514.

Every effort has been made in this office to increase the circulation of the journal, and it is believed that everything possible along this line has been done with the clerical force available. Letters were sent to every medical officer whose discharge from the service was noted in the lists of the *Journal of the American Medical Association*, and other propaganda work was also carried on. While the results from this were not as substantial as might have been hoped, they were sufficient to make the work of benefit to the Association. There has been a natural period of reaction after the close of hostilities, and it was to be expected that the interest, which was at high-water mark during the time of our active participation in the war, should ebb somewhat upon the signing of the armistice. The policy of the journal has not been changed, and it is believed that it is useful in its present form. Its relation with the Regular Services is firmly established, and as an evidence of this I quote the following letter from the Chief of Staff of the Army:

"WAR DEPARTMENT
"OFFICE OF THE CHIEF OF STAFF
"WASHINGTON

March 3, 1920.

"From: The Chief of Staff.

"To Association of Military Surgeons,
(Through the Surgeon General of the Army.)

"Subject. Officers' Reserve Corps.

"1. During the process of demobilization, the strength of the newly built Officers' Reserve Corps has reached approximately 75,000 officers of all grades and arms. These officers are a valuable asset to the military establishment and the stimulation of their interest in military matters, including such instruction as it is practicable to give them, is desired by the War Department.

"2. Pending the enactment and carrying into effect of legislation for the reorganization of the army, it is impracticable for the War Department to announce details relative to the organization and instruction of the Reserve Corps and the obligations, privileges and promotion of its members. In the meantime, it is suggested that reserve officers be given such information and instruction as is possible through the various service publications.

"3. There are now in existence, or in the process of formation, associations of officers of various arms of the service. It is understood that reserve officers are eligible and welcome to membership in these associations. The latter offer an existing and effective means of furthering close affiliation of regular and reserve officers and of furnishing instructive and informative matter to the Reserve.

"4. Established service associations can probably provide for occasional semi-local gatherings of regular and reserve officers, which gatherings will serve to bring about acquaintance and better understanding among all officers.

"5. The Department has noted your efforts to encourage reserve officers to become members of The Association of Military Surgeons and trusts that such efforts

will be continued and all reasonable steps taken by you to further the morale and instruction of reserve officers. The value of "The Military Surgeon" as a medium for the transmission of informative and instructive matter to reserve officers is fully appreciated. These efforts are approved by the War Department.

(Signed) PEYTON C. MARCH,
"General, Chief of Staff."

In accordance with the action of the Association at the last annual meeting announcement was sent to the honorary members who were elected and also certificates of membership in the Association. Acknowledgments of almost all of these have been received and are on file in the office. The business of the office has had to be carried on with an increasing burden of expense in view of the constantly rising schedule of prices. The contract for printing has increased 30 per cent during the past year and for engraving proportionately, while other supplies necessary also cost more. In view of this fact it has been found necessary to exercise careful economy in the management of the affairs of the Association and, due to that, the condition of the Association is one of financial soundness. The work of the Association, as far as the secretary's duties are concerned, is up to date with nothing outstanding except the ordinary monthly routine work.

It is the purpose of the secretary to advance the membership in the Association so far as possible to do so from his office, and it is recognized as a self-evident fact that the majority of this work should fall on his shoulders. It is beyond a question of doubt, however, that much additional work might be done by the individual members of the Association if they would bear this matter in mind and each one take upon himself a certain amount of responsibility along these lines. The personal element in setting forth the advantages of membership in the Association in securing new members plays a large part, and it is believed that, if this fact were taken into consideration by those who make up the Association, the increase in membership might be much more rapid than if left entirely in the hands of the secretary. At each yearly meeting there are many promises of assistance along just these lines, but, alas, the majority of them are apparently forgotten at the close of the meeting and do not materialize in the succeeding months in any visible or tangible form.

Our president has already dwelt on this question in his very able opening address, and it is my sincere hope that this year at least the membership may give some heed to his appeal and assist in pushing forward the affairs of the Association.

The Association is one which is gaining in importance and dignity, and, if it is worth while to belong to it, it is certainly equally worth while to see that it is assured of steady, onward progress.

As treasurer of the Association I submit the following as a statement of the affairs of that office. This report has been audited by two members of the Association, one from the Navy and one from the Army, who were appointed for this purpose by the Executive Council.

Receipts

Admission fees.....	\$2,256.00
Annual dues.....	6,624.43
Subscriptions.....	915.46
Advertising.....	7,333.86
Miscellaneous (including sale reprints and insignia).....	1,809.72
Total receipts.....	\$18,939.47

Cash balance, October 1, 1919.....	\$1,405.67
Grand total.....	20,345.14
Less disbursements.....	18,121.62

Cash balance, April 16, 1920.....	\$2,223.52
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Disbursements

Printing journal.....	\$10,900.60
Salaries and commissions.....	3,156.01
Postage.....	1,069.70
Stationery and printing.....	861.68
Cost of reprints.....	675.81
Telephone.....	57.89
Dishonored checks.....	30.75
Expenses of meetings.....	972.12
Miscellaneous (including cost of insignia, car fare, certificates of membership, etc).....	397.06
Total disbursements.....	\$18,121.62

Assets, April 16, 1920

U. S. Bonds, Third Liberty 4¼ per cent Converted.....	\$15,000.00
U. S. Bonds, Fourth Liberty 4¼ per cent.....	4,000.00
U. S. Bonds, Victory 4¾ per cent.....	6,000.00
Balance on deposit Union Trust Company.....	576.25
Balance on deposit National Bank of Washington.....	2,223.52
Total.....	\$27,799.77

Finally, I wish to express to the president and the Executive Council my thanks for their sympathetic cooperation and confidence in my efforts as an officer of the Association.

JAMES ROBB CHURCH,
Colonel, Medical Corps, U. S. Army,
Secretary-Treasurer.

THE SECRETARY: At a recent meeting of the Executive Council of The Association of Military Surgeons the following nominations for honorary membership in the Association were brought before the Council, and it was recommended that their names be proposed before the Association at this annual meeting for election:

ENGLAND

Colonel E. M. Pilcher, C.B., C.B.E., M.B., D.S.O., F.R.C.S., K.H.S.
Colonel H. J. Waring, C.B.E.
Dr. Norman Walker.

CANADA

Major General J. T. Fotheringham, A.D.G.M.S.
Col. A. Primrose, C.B.
Lieut. Col. A. T. Bazin, D.S.O.
Dr. J. C. Connell.

BELGIUM

Capt. Jules Voncken, Belgian Medical Service.

CUBA

Major Armando Guerrero y Bruffau, Cuban Army.

Capt. Nicanor Ybarra y Mella, Cuban Army.

FRANCE

Professors Leon Monier, Roussy, Demarest, Gregoire.

Captain Pleadwell moved that the gentlemen named be elected as honorary members of the Association. The motion was carried.

The report of the Committee on the Wellcome Prizes was next presented to the Association. The finding of the committee was as follows:

First Prize to the paper by "Busy Bee."

Second Prize to the paper by "K. K. K."

Honorable Mention to the paper by "Maplewood."

The envelopes containing the true names of the authors were then opened by the president and Col. James L. Bevans, M. C., U. S. Army, was found to be the winner of the First Prize; Capt. K. M. Bowman, M. C., U. S. Army, the Second Prize; and Capt. Frank G. Norbury, M. C., U. S. Army, Honorable Mention.

The proposed amendments to the Constitution and By-laws were next considered.

Proposed Amendment to the Constitution

Article 3, Section 3: add as a 6th classification the following: "All Medical Members and Medical Examiners of Local, Medical Advisory and District Boards officially appointed by the President of the United States, the Provost Marshal General of the United States Army and the Governors of the various States for the purposes of the Selective Draft Act."

Add as a 7th classification the following: "Ex-Medical officers."

Add as an 8th classification the following: "Acting Assistant Surgeons (Contract Surgeons) of the U. S. Army, Navy and Public Health Service."

Section 5 of Article 3: Strike out "1. Ex-Medical officers and." Strike out "5. Acting Asst. Surgeons (Contract Surgeons) of the U. S. Army, Navy and Public Health Service."

Renumber the remaining paragraphs one, two and three.

After the reading of the proposed amendment to the Constitution, the question was thrown open to discussion. Remarks were made by Capt. F. E. McCullough, M. C., U. S. Navy, and Dr. Horace M. Brown, of Milwaukee, after which a motion by Surg. J. W. Kerr that the first paragraph of the proposed amendment (as shown in italics) be stricken out and the amendment then be adopted was duly seconded and carried.

The amendment to the By-laws as presented by the Executive Council was next considered. A motion by Capt. F. L. Pleadwell, M. C., U. S. Navy, seconded by Asst. Surg. Gen. J. C. Perry,

U. S. P. H. S., was carried and the following amendment ordered written into the records: "That Section 2, Article IV, of the By-laws, be amended to read 'Delinquency for two years shall terminate membership, after due notice by the treasurer,' for two years substitute 'one year.'"

The president then named the following committees:

Nominating Committee

Capt. F. E. McCullough, M. C., U. S. Navy.
Col. James Robb Church, M. C., U. S. Army.
Asst. Surg. Gen. J. C. Perry, U. S. P. H. S.
Col. D. S. Fairchild, M. R. C., U. S. Army.

Auditing Committee

Col. Charles Lynch, M. C., U. S. Army.
Asst. Surg. Gen. J. C. Perry, U. S. P. H. S.

Committee on Resolutions

Capt. F. E. McCullough, M. C., U. S. Navy.
Col. C. R. Robbins, M. C., U. S. Army.
Commander Wm. Seaman Bainbridge, M. C., U. S. N. R. F.

At the conclusion of the business program of the session, our president, Lieut. Col. Joseph A. Hall, M. C., N. G., Ohio, addressed the meeting. (His address appears elsewhere in this issue.) Following the address of the president, a paper by Surg. L. B. Frick, U. S. P. H. S., on "Emergency Measures in Malaria Control" was read and discussed by Surgeon Goldberger, Colonel Lynch, Lieutenant Commander Figueroa, Doctor Brown, Asst. Surg. Gen. J. C. Perry, Lieutenant Colonel Hall, Lieutenant Colonel Robbins. Following the discussion a paper on "Activities of the Air Medical Service and the Flight Surgeon" was read by Lieut. Col. Robert A. Strong, M. R. C., U. S. Army, and discussed by Major Bonham and Commander Bainbridge.

The meeting then adjourned to the session at 2.00 p. m.

At the session at 2 p. m. the report of the Necrology Committee was received standing. The following report of the Committee on Subordinate Organizations was next presented by Lieut. Col. G. M. Blech, M. C., Ill. N. G.:

Your Committee appointed at the St. Louis Meeting to investigate and report on the matter of the formation of state organizations subordinate to the Association of Military Surgeons of the United States desires to make the following recommendation:

1. That the organization of subordinate associations is advisable, the qualifications for membership in which shall be the same as for the parent organization.
2. That these organizations shall be autonomous, excepting that their constitutions and by-laws shall not conflict with those of the parent organization.
3. That a committee be appointed, consisting of a Chairman and two members at large, which shall have authority to add to its number one member from each

state, and which shall furthermore have authority to proceed with the organization of state branch associations and report at the next meeting of the association.

SAMUEL C. STANTON,

Brigadier General M.C., Ill.N.G. (Ret.).

GUSTAVUS M. BLECH,

Lieutenant Colonel M.C. Ill.N.G.

FRANK L. PLEADWELL,

Captain M.C., U. S. Navy.

The report of the committee was accepted by the Association and the committee discharged.

Colonel Lynch suggested that special resolutions be drawn in the case of Col. John Van R. Hoff and Col. Louis A. La Garde, M. C., U. S. Army, deceased. Thereupon the following committee was appointed to draw up these resolutions: Col. Charles Lynch, M. C., U. S. A.; Capt. F. L. Pleadwell, M. C., U. S. N.; Asst. Surg. Gen. J. C. Perry, U. S. P. H. S.

The following papers were then read and discussed: "Training of the Enlisted Men of the Medical Department," by Lieut. Col. Gustavus M. Blech, M. C., Ill. N. G.; "Some of the Lessons of the War Which are Applicable to Civil Practice," by Dr. John Smyth; and "Some Commonly Misapprehended Points in the Diagnosis of Pellagra," by Surg. Joseph Goldberger, U. S. P. H. S.

The meeting then adjourned until 8.00 p. m.

The third session opened with motion pictures furnished by the Abbott Laboratories. Following this the literary program was carried out as per program.

The fourth session was devoted to the reading and discussing of the following papers:

"Neurologic Service in Naval Hospitals," by Lieut. Comdr. R. F. Sheehan, M. C., U. S. N., and "The Practical Aspects of Trachoma and Its Control," by Surg. John McMullen, U. S. P. H. S. The meeting then adjourned to 2.00 p. m.

Fifth Session, 2.00 p. m.

At this point in the meeting Admiral Braisted, Surgeon General U. S. Navy, introduced the following foreign delegates, who were welcomed by the Association standing: Surg. Rear Admiral Sir Humphrey Davy Rolleston, K. C. B., F. R. C. P., of London, England; Col. H. J. Waring, C. B. E., Member of the Council of the Royal College of Surgeons of England; Dr. Norman Walker, of the Triple Qualification Board of Scotland and Treasurer of the Royal College of Physicians of Edinburgh.

Dr. Horace M. Brown, of Milwaukee, read a paper entitled "The Founding of This Association and Its Founder as I knew Him. An

Anecdotal Sketch of Professor, Doctor Nicholas Senn." This paper was followed by two papers, one by Lieut. Col. Martin B. Tinker, M. R. C., U. S. A., entitled "The Results of Wound Excision and Suture," and one by Col. T. W. Salmon, M. R. C., U. S. A., entitled "The Future of Psychiatry in the Army." Due to illness of the author, Colonel Salmon's paper was read by Commander William Seaman Bainbridge, M. C., U. S. N. R. F.

Following the reading of these papers, the meeting recessed to 8.00 p. m.

Sixth Session, 8.00 p. m.

At the sixth session, the following gentlemen, who were elected to honorary membership at the first session of the meeting, were called before the Association by the secretary, who addressed them as follows and invested them with the badge of the Association in token of their election to membership:

Surgeon Rear Admiral Sir Humphrey Davy Rolleston, K.C.B., F. R.C.P. of London: Although it has for some time been our privilege to count you as a member of our Association, it is, we feel, an added honor that you are here with us today and it is a most gratifying duty that as Secretary, I am permitted to present to you this badge of our Association. I speak for all our members in expressing the hope that among the many honors which have come to you in recognition of your attainments and which may come in the future, this be not altogether forgotten but may serve to remind you of the sincere admiration and respect of this Society, which is very proud to claim you as a member.

Colonel H. J. Waring, C.B.E., Member of the Council of the Royal College of Surgeons of England: Distinguished among distinguished men, member of a body whose name is everywhere known, honorable and honored, tried and trusted in the affairs of your state, it is an honor for me, as Secretary of The Association of Military Surgeons of the United States to advise you of your election as an honorary member of our Society and in token thereof to present you this badge.

Dr. Norman Walker, Triple Qualification Board of Scotland, Treasurer Royal College of Physicians of Edinburgh, an authority in matters of your profession, a welcome guest with a sister nation, we appreciate the honor which devolves on our Society through your association as an honorary member and it is a pleasure to me to present to you this badge of the Association.

Colonel A. Primrose, C.B., Canadian Army Medical Corps: Learned in the doctrines of your profession, skilled in its practice, ripe with the experience gained in the defense of your realm in the far places of the world, it is a pleasant duty for me, as secretary of this Association, to welcome you as a member and to present to you this, our badge.

Lieut. Col. A. T. Bazin, D.S.O., Canadian Army Medical Corps: A tried soldier of the Empire who gave your skill and strength on the bloody fields of Flanders and to whom your country has already said "Well done," we gladly welcome you to membership and in recognition of this offer you this badge of the Association.

Capitaine Jules Voncken du Service de Sante de l'Armee royal Belgique, distingué sur le champ de bataille, ainsi dans le monde des lettres medicales, je me felicite

de vous saluer comme membre de notre société et de vous présenter l'insigne de notre organization.

Commandante Medico Armando Guerrero y Bruffau, del Cuerpo de Sanidad, del ejercito de la Republica de Cuba, oficial distinguido de los fueros armadas de Nuestra Vecina Republica, me felicito al poderle dar la bien venida como miembro de honor de nuestra sociedad y, de presentar a Vd. esta medalla como testimonio de nuestra afecto y admiracion haci a su Patria y a su prestigiosa personalidad.

Subsequent to this a paper by Maj. Rudolph Matas, M. C., U. S. A., entitled "Impressions gathered from the Experiences in the Great War from the Surgery of the Vascular System," and one by Capt. F. L. Pleadwell, M. C., U. S. N., entitled "Types of Motor Ambulances observed Abroad," were read and discussed.

The meeting then adjourned to 9.00 a. m., April 24.

SATURDAY, APRIL 24

Seventh Session, 9.00 a. m.

The seventh session opened with the report of the Nominating Committee as follows:

For President: Surgeon J. W. Kerr, U.S.P.H.S.; *For First Vice-President:* Capt. F. L. Pleadwell, M.C., U. S. Navy; *For Second Vice-President:* Col. Charles Lynch, M.C., U. S. Army; *For third Vice-President:* Col. David S. Fairchild, M.R.C., U. S. Army; *For Secretary-Treasurer:* Col. James Robb Church, M.C., U. S. Army. To fill vacancy on the Sinking Fund Committee caused by the death of Col. John Van R. Hoff, U. S. Army: Dr. Geo. T. Vaughan. Regular election of one member: Lieut. Col. Joseph A. Hall, M.C., N.G. U.S. (Ohio).

A motion by General Griffith, that the report of the committee be received as read and that the rules of the Association be suspended and the secretary be instructed to cast his ballot for the entire ticket as read, was duly seconded and carried.

A paper entitled "Modern Military Medical and Surgical Reconstruction and the Measures of Coöperation Practiced in Relation to the Federal Board for Vocational Education, Regarding Discharged Compensable Disabled Soldiers," was read by Col. Frank Billings, M. R. C., U. S. A., and discussed by the members of the Association.

At this time the newly elected president was escorted to the chair by General Griffith. Surgeon Kerr addressed the meeting as follows:

MR. PRESIDENT AND MEMBERS: It hardly seems fitting for me to assume to speak at this time. However, I realize, it is a great honor to be chosen president of this Association and I wish to express my appreciation of this honor. I have a real sense of unworthiness and although I have been a member of the Association for a long time, my duties and relations to it have been of a routine character and there are many far more worthy to become the president. There are many problems confronting us today and as medical officers it is our duty to work with the idea that in the future our government shall be prepared to discharge its obligations in time of war. In the meantime, we should take advantage of all the lessons that have been

presented to us in time of war and thus better carry on our peace time activities. As a Public Health Officer, I am especially interested, and have been for years, in problems of public health and their solution. I feel that the lessons that have come out of the war will be of great advantage to our country and I feel that this Association can be of great aid in the developing of this work and be of great help to our service. I pledge my best efforts to the development and carrying on of the work of the Association and I ask the members for their whole-hearted coöperation in order that the Association may go forward with its good work.

The Auditing Committee reported that the report of the treasurer had been examined and found correct.

The Committee on Resolutions then introduced the following resolutions, which were read and accepted by the Association:

Resolved: That the Association of Military Surgeons in Annual Session assembled at New Orleans, La., April 22 to 24, 1920, hereby expresses sincere regret at the loss by death of two of its most prominent members—Col. John Van Rensselaer Hoff, Medical Corps, U. S. Army, and Col. Louis Anatole La Garde, M.C., U. S. Army. The former served as president of the Association from 1901 to 1902, and later as secretary and editor of the official journal. The latter filled the office of Secretary and editor *ad interim* from August, 1918, to December, 1918.

Both interested themselves actively in the affairs of the Association from a very early period in its history and both played a prominent part in advancing the interests of the Society.

CHARLES LYNCH,
F. L. PLEADWELL,
J. C. PERRY,

Committee.

Resolved: That the Secretary be instructed to convey the thanks of the Association to Col. Isadore Dyer and Capt. C. E. Verdier for the assistance rendered in arranging the program of this meeting, and to Dr. Oscar Dowling, President of the Louisiana State Board of Health, for his courtesy in furnishing a lantern for the use of the Association at the meeting.

F. E. McCULLOUGH,
WM. S. BAINBRIDGE,
C. R. ROBBINS,

Committee.

The meeting then adjourned *sine die*.

Doctors Gustave Roussy, E. E. Demarest and Capt. Nicanor Ybarra, who were unable on account of accidents of travel to be present at the time the other honorary members were decorated, were presented with the badge of the Association by Dr. Horace M. Brown, on Tuesday, April 27, at the Hotel Grunewald. The presentations were made with the following citations:

M. LE DOCTEUR GUSTAVE ROUSSY ET M. LE DOCTEUR E. E. DEMAREST:

MESSEURS: Malheureusement les accidents du voyage ont privé les membres de l'Association des Medecins Militaires des Etats Unis, du privilege et de l'honneur de votre presence aux deliberations pendant la conference de l'Association la semaine derniere. C'est une perte irremediable pour nous autres.

Mais, Messieurs, nous vous sommes reconnaissants de l'éclat que pendant la durée de la Guerre vos travaux et vos sacrifices personnels ont jeté sur la profession chirurgicale, non seulement de la France mais aussi du monde entier.

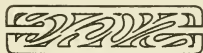
En reconnaissance de cette gloire et de ces sacrifices, nous vous prions d'accepter de faire partie de notre Association, et de contribuer à ses efforts et à ses travaux comme membres honoraires de "The Association of Military Surgeons of the United States.

En témoignage de notre désir, nous vous prions de bien vouloir accepter l'insigne de notre Société.

SEÑOR CAPITAN NICANOR YBARRA Y MELLA:

SEÑOR: Las relaciones que existen ahora entre la Republica de Cuba y los Estados Unidos son del caracter mas intimo; y sobre todo los lazos que unen al mundo científico, especialmente al de la medicina, están tan firmemente establecidos que usted puede comprender facilmente el deseo de cordialidad que la Asociacion de Cirujanos Militares desea reine entre los hombres de ciencias de las dos Republicas.

Para gratificar este deseo, la Asociacion de Cirujanos Militares me ha suplicado obtener de usted nos favorezoan entrando como miembro de la Asociacion, y así nos beneficiar con su valiosa ayuda en nuestras deliberaciones y nos honrar con aceptar una sociedad honoraria en nuestra Asociacion. Con este objeto nos suplicamos a usted aceptar bondadosamente de nosotros dicha sociedad así como la insignia de nuestra Asociacion.



ADDRESS OF THE PRESIDENT, LIEUTENANT COLONEL JOSEPH A. HALL

Gentlemen of the Association:

It is my duty and pleasant privilege to open this the twenty-eighth annual meeting of the Association of Military Surgeons of the United States and in so doing to address you as the president of the Association.

I am glad of this opportunity, not only because it affords me the chance to express to you the gratification which I feel in standing, for a time, as the official head of a society of the worth and reputation of ours, but because it allows me to pay tribute in my own words to the worth of this Association and to remind you also of the benefits which membership in it carries to those of our profession.

I have chosen to do this rather than to address you on any scientific or technical ground because, in the program as arranged, this field will be most ably covered, and because I believe that a reminder as to our aim and object may not be amiss in these days succeeding the time of our trial on the bloody fields in France.

I am going to endeavor not to be so prolix as to weary you with words, and I ask you to make allowance for me if my own personality creeps into what I have to say. It is a matter which *does* concern me personally, and I cannot but feel that my own position is that of many others of you who are members of the Association and that my case finds its parallel many times in those of you who are present and among the many others whom circumstance has not allowed to join us here today.

We shall hear later, from Dr. Brown, of the beginnings of this association, of the recognized needs which gave it birth; and those of us who have been members for any length of time are cognizant of the growth of the society and the increasing importance of its work.

That is the point which I wish to emphasize—the fact that, far from being accomplished, the task of the Association of Military Surgeons is as much a live issue now, in 1920, as it was when its originators saw the necessity for it years ago and commenced the work which we now carry on. They have handed us the torch from failing hands; be ours to hold it high.

“Preparedness” is a topic about which we have heard and still hear much, and in its many phases it has both supporters and antagonists. Yet, if it come to the literal meaning of the word, there cannot well be any opinion save that of approval. If any situation is to arise which shall need action, either individual or national, there can be no

question that those who have made provision for a contingency, however remote, are those who will be in the better state to cope with it when it comes. This is the basis on which our association was founded, and there are many members of it who can bear testimony that what they have learned through it has borne fruit, not only in the time of war just passed but in the stress of other crises. We cry loudly for the education of the public in many matters, and this age is one of instruction in many things. Where, then, are we to place an institution which shall be of advantage in fitting us to take up intelligently the burden which may fall on our shoulders as a result of the necessities of the state? This idea of instruction, of the teaching of the things which must be known by the civilian practitioner before he is fit for duty with the colors is the object which the originators of this society sought to attain. They strove to fit themselves for service at their country's need, and it is with this idea that the Association has gone on through the succeeding years.

As an evidence of the soundness of the idea there is no further testimony needed than the example of the Federal Government in the various measures which have made for the improvement of the organized militia: the establishment of the courses at Leavenworth with that end in view and the inauguration of the correspondence school for medical officers. All these have had as their object the making of better material from the uninstructed but willing personnel which, in the event of war, will be that on which the country must lean.

That, then, is the "why" of our Association—the recognition of the truth that in the event of a call to arms there must be many who will have to lay aside the duties of everyday life and subordinate everything to the common cause. And with all respect to our brothers of the regular services, it is on our shoulders that the heaviest share of this burden must fall, for we are many where they are few, and, although they shall be the leaven in the loaf, still that loaf in its majority is to be made up of you who are called from your offices and consulting rooms to don strange clothes and walk strange ways in the service of your country.

That being so, and there is no controverting it, is it not incumbent on each one of us to so fit himself that in the hour of need he shall be able to give the best that is in him?

I know that the average man will say: "Why all this fuss? We are done with war and there is little probability that I shall ever see any more." Is it ever safe to so predicate? What was the opinion in 1915 and even in 1916? Who then had any idea of the consummation that was to come on April 6, 1917? Every good citizen

deplores the possibility of armed conflict, but all know that it is an ever-present possibility, and any logic must teach us that any step taken to shorten its duration is altogether in keeping with the civilization of this age.

I am afraid that many members of our Association regard their duty done because they are themselves members in good standing in it. Is that really so? Am I fulfilling my entire duty to the state if I leave any stone unturned which shall make available for it additional trained personnel in the time of need? Then, perhaps, although I have perfected myself in the things which I should know in order to carry out intelligently the duties devolving on a doctor under arms, I shall not have accomplished all that I might unless I make a reasonable effort to see that others do so as well. I do not mean by this that I advise you to be your brother's keeper, but I do mean to say that there are many of your brothers who have never had the matter presented to them and that they might profit from your experience and advice.

That is what I wish to impress on you—that we have in our Association the foundation for much good for the state and that it is through your efforts that this may be made available when it is needed. It is the tradition on which The Association of Military Surgeons was founded, and it is as much our duty now to carry it on as it was for those who first saw the necessity for such a banding together of the medical men of the United States. I know that these are the days of reaction; that we are all, to quote our British cousins, "fed up" with matters military and very desirous of going back to our own particular niches and forgetting all about it. However, if my premises, as stated in what I have already said, are true, that is just what we cannot do. Military life is not now a matter of paramount importance perhaps, but as a safeguard of the peace of the nation it must always be at least a matter of importance and, as such, a live issue with each one of us.

There you have the gist of what I wish to say to you. I am trying, as one who at least wishes to be a good citizen, to impress on you the needs of the state and one way in which we of the medical profession may help to meet them. We have a society of which we may be proud, and it is one which should grow each year in position, dignity and numbers. The object of its foundation is public service, and it seems to me that it should be the aim of each one of us to see to it that each year finds us with a larger quota, and representing, as such, a greater number of those who are ready in a crisis to answer when the call comes. I know how easy it is to resolve at these annual meetings



Joseph H. Hall

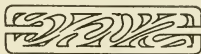
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that we will go home and do what we can toward strengthening the Association, and I know also, alas, how very easy it is to forget these resolves in the press of professional work. I am not asking any promises from anyone, but I do urge on you, as your president, that you take the matter seriously to heart and endeavor to coöperate in advancing the common cause.

As to the present status of the Association, I shall go into no details, since our secretary will give them in his report in better form than I could quote them, but I do wish to say that in spite of the fact that there has been the disinclination for anything connected with war to which I have referred, we have gone on and are on a sound basis and with prospects of advancement. That this should be so in a period of reconstruction is a cause for congratulation, but not one for any amazement when we take into consideration the fact that this Association is one of the best known in the country and numbers so many distinguished men on its rolls.

I hope that I have not wearied you in what I have had to say, and I am hopeful that you may receive it in the same earnest way that it is spoken and that my words may be productive of good results.

I do not feel that I can close without expressing, for the Association, our gratification and pleasure in the presence with us here of the representatives from our Allies. It is a graceful thing for them to have come, and I hope that, even as they aided us and comforted us on the stricken fields of France, so they will here and now lend us the assistance of their able counsel and advice.



JOSEPH ARDA HALL, LIEUTENANT COLONEL, OHIO NATIONAL GUARD

Lieut. Col. Joseph A. Hall, who retired from the presidency of the Association on April 24, was born in New England, Ohio, on December 4, 1872. He was educated at the public schools of Chillicothe and Cincinnati, Ohio, and received his military training at the Ohio Military Institute and Ohio Wesleyan University. After the completion of his schooling he graduated from the Miami Medical College in Cincinnati on April 1, 1897. On December 4, 1892, he enlisted in K Company, Fourteenth Infantry, Ohio National Guard, and was discharged October 16, 1893, to accept a commission as First Lieutenant and Commissary Officer, Fourteenth Infantry, Ohio National Guard, from which office he resigned April 21, 1897. On May 25, 1898, he was appointed Acting Assistant Surgeon, and this contract was annulled December 31, 1900. He was commissioned Captain and Assistant Surgeon of the Ohio National Guard on November 3, 1903, and promoted to Major and Surgeon on June 28, 1906, and was commissioned Major, Medical Corps, Ohio National Guard, on September 25, 1908, with rank dating from June 28, 1906. During this time he was assigned to duty as Acting Surgeon General of Ohio, and was commissioned lieutenant colonel, Medical Corps, Ohio National Guard, on April 24, 1911.

On June 28, 1916, Colonel Hall was mustered into the United States service for border duty; on August 5, 1917, he was drafted and mustered into the Federal service and assigned to duty as division surgeon of the Thirty-seventh Infantry and served in this capacity in this country and overseas in France, being mustered out of the United States service on March 17, 1919. During his service in the National Guard he served a number of times in strike duty and was division chief surgeon during the floods of 1913. He served as aide-de-camp to Governors Myron T. Herrick, John M. Pattison, Andrew L. Harris, Judson Harmon, and as personal aide to Gov. James M. Cox. In 1911 he served with the division surgeon of the Provisional Division, at Fort Sam Houston, Tex., and in 1912 was a member of the Field Service School for Medical Officers at Fort Leavenworth, Kans.

From the above it will be seen that his association with the military side of his profession began in his early life and has been consistently carried through, and those who know him and his record can testify to his efficiency in the various duties in which he was employed.

During his career in civilian medicine he has been a member of the staff of the Cincinnati General Hospital; Associate Professor of

Gynecology of the Ohio-Miami Medical College, Medical Department, University of Cincinnati. He was also medical member of the board for the construction of the Lima State Hospital. This work required six years, and the hospital is a most modern institution of 1,200 beds. At the time of being called into the service of the United States he was chief surgeon of the Cincinnati, Hamilton & Dayton Railway.

During his period of service as president of the Association of Military Surgeons the business of the Association has made smooth onward progress, and he retires leaving its affairs in good shape and with the prospect of further advancement. The last meeting over which he presided and which terminated his connection with the Association as one of its officers was one of the most successful in the history of the Association, and this was in no small measure due to his energy and competence as the presiding officer. His valedictory address carried the thought both of loyalty to the Association over which he presided and of loyalty to the country of which he is a citizen, and is well worth careful consideration from either angle by the members of the Association. We print this elsewhere in this issue.

Those who are fortunate in knowing Colonel Hall need no reminder of his efficiency in whatever he undertakes nor of his personal grace and charm for those whom he honors with his friendship.



TYPHUS FEVER IN POLAND

BY COLONEL HARRY L. GILCHRIST¹

Medical Corps, United States Army

(With three illustrations)

FROM present indications Poland is threatened with one of the worst typhus fever epidemics in the history of the world, which, unless checked, will prove a danger that will threaten the whole of Europe. The Government of Poland is fully alive to the duties incumbent upon her in view of the seriousness of this present epidemic, but cannot conceal the fact of her inability to cope with this grave situation which is developing for the reasons of her lack of financial resources and sufficient sanitary supplies in the present overwhelming emergency.

The typhus epidemic which for the fourth year in succession has been raging in Poland has increased in intensity each year due principally to large influx of refugees and prisoners of war from Russia and to the thousands of cases being imported from the interior of Ukrainia and other eastern territories. The situation at present is getting beyond control.

This western spread has become more and more extensive in a measure as the military and political conditions of Ukrainia have become more unsettled. In fact the breaking up of the armies of General Petlura resulted in tens of thousands of the Ukrainians percolating through the frontiers passing principally through the areas between Tarnopol in the north and Borszcow in the south. Sometimes they presented themselves at the quarentine stations in such crowds that they could not be handled, and a break through would result thereby permitting thousands of cases to be scattered throughout eastern Galicia.

It is a known fact that the commanders of the Bolshevik armies are ridding themselves of typhus fever cases by sending them in armoured trains to the Polish border. There they are unloaded and allowed to drift for themselves into Polish territory.

When Denikin's armies retreated before the Bolsheviks and the Polish armies invited to occupy the vacant territory, which they are still engaged in, a new and unbelievable large source of typhus fever was opened up. Certain of the larger towns such as Winnica were found to harbour thousands of cases without the least care or attention having been given them. As a rule Denikin's garrisons left behind were garri-sons of typhus fever.

¹ Commanding American Polish Typhus Relief Expedition, Warsaw, Poland, February, 25, 1920.

The center of the present typhus epidemic appears to be in Russia and Ukrainia, and thousands of refugees entering Poland in their flight from Bolshevism are received in a frightful state. They relate terrible tales as to the number of cases of typhus fever and the suffering resulting therefrom. During the extreme cold these unfortunates inflicted with the disease and without medical attention of any kind, crowd together in unventilated, heatless buildings trying to keep warm. They die by the thousands, their bodies being piled in great heaps in adjoining buildings awaiting burial. Poland realizes these conditions in Russia and Ukrainia, and from a humanitarian standpoint makes no attempt to bar entrance to these refugees. She is thus a rampart against the dangers of this disease, which threatens the world, and which if Europe is allowed to be thoroughly saturated will result in perhaps one of the world's greatest catastrophes.

In Galicia conditions are bad, very bad, naturally so considering the unsettled state of this part of the country during the past five years. At the very onset of the war the Russian forces entered this part of the country from the east by way of Brody and Tarnopol, and from the south from Bukowinia by way of Nadworna, Lemberg or Lwow, being taken without resistance September 3, 1914. The Russians continued their advance westward almost to Crakow, occupying the whole of eastern and a large part of western Galicia until June 1915 when they gradually retreated before the advancing Germans. Lwow was evacuated in haste June 20 of that year, without being destroyed as were the majority of the smaller towns and villages which were systematically pillaged and burned. A determined stand was made at Zloczow, about sixty kilometers east of Lwow, for three months when they were forced to continue their retreat to the border. Subsequent to the revolution in 1917 that so demoralized the Russian Army, the Austro-German forces advanced into Russia occupying the fertile Ukrainian steppes as far as Kiev and Odessa and beyond. Until the signing of the armistice in November, 1918, foodstuffs were exported thence in great quantities into Austria and Germany, and thus Galicia did not suffer great want until the troops of the Central Allies were withdrawn. At that time the Ukrainian national movement which was accompanied by so many acts of violence and brigandage in southwestern Russia, was participated in by the large Ruthenian or Ukrainian population of Galicia, and for almost a month Lwow was the scene of the fiercest kind of intraurban warfare until the arrival of regular Polish troops restored law and order.

Paralleling the various political and economic changes the sanitary and especially the typhus, conditions, not at all alarming during the years of the war itself, seem to have become very serious following the armis-

tice, due to the extensive infection introduced by the entirely undisciplined and very poorly equipped Ukrainian army. Indeed the maximum number of cases of exanthematic typhus in this portion of the Polish army which was reached in the spring of 1919, seems to be due to the large number of Ukrainian prisoners, and to the contact of the soldiers of the two forces.

In Galicia whole towns are crippled. Schools are closed and business practically suspended from the effects of the disease. In the northeast of Poland American inspectors report the disease raging as affecting nearly every home with a high mortality. Starvation and lack of clothing and medicines are also in evidence. There are few doctors and no nurses. As a result of the ravages of the past war and the fact that Poland has been occupied by several armies who, when retreating either destroyed or took with them all the materials of any value, the eastern country has been left with only absolutely meager essentials. Homes, which for the most part are rudely constructed affairs, and without furniture of any kind, offer shelter for thousands of these sufferers. They have no beds and lie on straw or hay strewn floors. The same materials answer the purpose of protecting them against the Polish winters. Many of these small huts consist of but a single room and here father, mother and several small children reside. The present article of diet in the majority of cases consists of potatoes, beets and other vegetables and these in only starvation quantities. They seldom see bread. Meat is furnished only occasionally.

At present nearly every house has from one to five cases of typhus fever all lying on the usual beds of straw or hay. Houses have been visited by me, in which the entire family were stricken, some delirious and without medical attention of any kind. Some cases were found in which the only nourishment consisted of raw potatoes or raw beets. The friendly natives are doing what they can to relieve this suffering, but due to the shortage of the essentials of living their aid is of little avail. Doctors and nurses are unknown to these people, the peasants acting as combined doctors, nurses and undertakers. If the dead have no near relatives to claim their effects the bodies are stripped before burial and their clothing taken away in ignorance by the peasants to distant parts, to be sold, thus implanting the disease in new areas.

There is a great dirth of doctors, in some districts there being but one doctor to each one hundred and fifty thousand inhabitants, the latter in many cases badly scattered. These doctors are doing a magnificent work but are greatly overworked and labor under terrible handicap of the lack of medicines and nourishment for the sick. The death rate among doctors has been very great; in Galicia alone over

forty-six doctors have thus far succumbed. Included in this list is the name of Lieut. Colonel Register, Medical Corps, U. S. Army, who recently died in trying to help these people. Colonel Register was taken ill on December 18 and died January 2. A letter was received from him dated December 17, in which he made an invaluable report on conditions. He also took occasion in the same letter to recommend a young Polish doctor for faithful services and referred to him as a "live wire." Both Colonel Register and the "live wire" are now dead from the disease. Out of twelve doctors in Tarnopol hospitals ten have given up their lives for the cause. The mortality this year is very high being estimated all the way from 10 to 60 per cent. No one knows how many cases of typhus fever there are in Poland. The disease is here, there and everywhere. It is believed by the most conservative that the deaths from the disease will amount to hundreds of thousands. No reliable records are kept in the infected areas and outlying districts.

One fact is certain, the inhabitants of eastern and southeastern Poland are dying by the thousands. As stated before many cases are coming into Poland from the east. Quarantine stations are established along the eastern and southern borders and every attempt is being made to use them, but without food, fuel or clothing, little can be accomplished and thousands are permitted to enter the country without any attention having been given them other than registration and partial assistance in helping them along towards their homes.

The prisoners and refugees camps are in a very frightful state. Food, clothing and medicines are badly needed. Typhus fever, in all these camps, is greatly on the increase. There are practically no doctors nor nurses to attend these cases. The following extracts from a report of Maj. Willis P. Baker, Medical Corps, U. S. A., a member of this organization illustrates conditions found in a camp recently inspected. These conditions are quite general in other camps:

There has been a great shortage from the first of all sanitary facilities. The hospital was built with a 200 men capacity. There are actually 843 bed cases now in the hospital and in improvised barracks, most of these cases are typhus fever, with also a scattering of tuberculosis, dysentery, relapsing fever and small pox.

The first convoy in August, 1919, consisted of 200 men, of these 30 had typhus fever upon arrival at camp and in the next few days a total of 180 men or 90 per cent developed typhus. But in spite of this no epidemic occurred among the men of the barracks until December, 1919. Every convoy of prisoners arrived in about the same condition; all men were lousy and already infected.

In December, 1919, all prisoners were exchanged with Ukrainia and this camp began receiving prisoners from a new part of the front; 400 came every day from a section of the front where there are 25,000 cases of typhus fever. Practically 80 to 90 per cent of the men were infected upon arrival. The resources of the camp were overtaxed and the disease broke out among the officers and all the workers. Of

eight doctors, seven fell to typhus, leaving only one for the great mass of patients. There are six other officers on the grounds in charge, two of these are now ill with typhus. A large number of the permanent personnel became infected.

In the hospitals the patients are lying on the floors, or on simple board platform. There are no linens or washing of any kind. The bed sacks are made of paper and are very old and dirty. Straw is dirty, infected and lacking generally. Blankets are made of paper and the patients suffer terribly from the cold. There are no available medicines, instruments or hospital utensils of any kind. Washing and latrine facilities are almost absent and the whole place is foul and terrible. There are no towels or clothes of any kind in the hospital. There is a great shortage of eating utensils—only 800 simple pots to feed over 800 patients, so the feeding is done in turns, taking a great deal of time with no cleaning between times.

The patients are poor, foul and lie in their rags of clothing cuddled up under the one paper blanket and are in the most extreme misery. It is no wonder that tuberculosis is spreading among the patients.

It is interesting to know that of the 2,400,000 refugees and prisoners of war entering Poland during the past fourteen months, less than one half were Poles; the remainder representing 27 other countries, including natives from the United States. Notwithstanding this fact, Poland has, thus far, been obliged to stand the brunt of the work.

THE NUMBER OF REFUGEES ENTERING POLAND DURING
PAST FOURTEEN MONTHS

During the past year there were approximately 2,400,000 refugees and prisoners of war who entered Poland. Of this number 1,206,089 were prisoners of war as follows:

Poles.....	374,124	Austrians.....	56,746
Russians.....	554,486	Ukrainians.....	42,165
Germans.....	19,503	Serbians.....	689
Lithuanians.....	14,407	Italians.....	1,783
French.....	4,078	English.....	70
Hungarians.....	44,286	Americans.....	8
Bulgarians.....	504	Ruthenians.....	43,365
Turks.....	611	Jugo-Slovaks.....	1,366
Belgians.....	17	Jews.....	4,349
Esthonians.....	409	Greeks.....	45
Letthonians.....	1,593	REFUGEES	
Chorvatians.....	426	Men.....	310,273
White Russians.....	13,780	Women.....	175,565
Chinese.....	90	Children.....	141,250
Tchecks.....	19,914		
Roumanians.....	5,165		627,088

Those who fled from the Bolsheviks to the Polish frontier and who did not pass through the quarantine stations or natural ports of entry, estimated at about 500,000.

Number of cases of typhus fever appearing among the refugees when entering the quarantine stations, 26,580. Of this number 1,560



WAITING TO BE BATHED AND DELOUSED.



IN THIS SHACK AN ENTIRE FAMILY OF SIX ILL WITH TYPHUS.

(To face page 626.)



EVERY OCCUPANT OF THESE SHACKS DOWN WITH TYPHUS.

died soon after entering the station. The proportion of typhus fever cases appearing among the refugees during the past three months has been greatly increased. The following is an extract from the report of one of the medical officers with this expedition stationed at Dorohusk quarantine station: "Yesterday a train of refugees came in from the east. There were 118 refugees unloaded here, all were filthy and covered with vermin. Of this number I removed 15 well advanced cases of typhus fever to the hospital." Reports have been received from other stations giving the same proportion of cases.

WHAT POLAND IS DOING TO CHECK THE SPREAD OF TYPHUS FEVER

Poland has and is still spending millions of marks monthly for this work. It is believed that no country in the world has undertaken a similar problem on such a gigantic scale. She has purchased from the American Liquidation Board alone four million dollars worth of materials and besides this purchase she has also made extensive purchases from England and other countries. It might be of interest to state that the purchases made from the former organization required thirty-two trains, each of over 50 cars to transport the materials into Poland. Included in this equipment are the following important items: All the steam sterilizers which were in use by the American forces in France, twenty seven mobile steam laundries, 500 mules with harnesses, hundreds of carts, drags and etc., 10,000 beds, 40,000 sheets, blankets and pillow slips, 40,000 towels, 100 tons of soap, 17 motorized mobile bathing plants, 300 portable bathing plants, 4,000 Serbian barrels, 50 tons of washing soda, 1,000,000 suits of cotton underclothing, 160 three-ton Packard trucks, 320 Ford ambulances, 160 Ford touring cars, 5 mobile machine shops, together with hundreds of other items too numerous to mention.

The Polish Diet has fully realized the dangers connected with the situation and has voted unlimited credits to the Minister of Health to be used in combatting this eastern epidemic, further the Minister of Public Health has been empowered to appoint epidemic commissaries, or commissioners of health, whose duties are to coordinate and direct the work against infectious diseases of all agencies concerned, both military and civilian, these commissioners being endowed with summary judicial powers. Their word pertaining to the fighting of typhus fever in their districts is law. The plan of action of these commissaries is directed from the Central Committee attached to the Minister of Public Health.

This Committee at present consists of the following: Col. H. L. Gilchrist, Medical Corps, U. S. Army, Commanding the American

Typhus Fever Expedition, and four doctors attached to the Ministry of Public Health.

For purposes of administration the Republic of Poland has been divided into nine districts, numbered consecutively from 1 to 9. Each of these districts is under the control of a health commissioner. Each district is divided into counties or sub-districts with a county or sub-district medical officer appointed by the Minister of Public Health.

In Congress, Poland weekly reports are received from every district thereby enabling the Ministry to keep a close check on the situation. Every effort is now being made to organize that part of Poland outside of the former division and when completed will practically place the entire country under the immediate supervision of the Minister of Public Health.

Departments of propaganda, transportation, statistics, hospitalization, quarantine, finance and schooling have been organized, each department being under the immediate charge of an officer of the Minister of Public Health.

The American Typhus Relief Expedition is working with and under the direction of the Minister of Public Health.

Heretofore there have been five different medical organizations operating in Poland and without coördination, each working independently, as a result much confusion was experienced. At present all medical organizations are operating under the direction of the Minister of Public Health in all matters pertaining to the fighting of typhus fever.

The plan of action decided upon by this combined body, in the fighting of typhus fever, is as follows:

(a) The organizations, equipment and maintenance of epidemic hospitals so as to ensure hospitalization and the removal of all typhus fever cases to hospitals.

(b) The establishment of experimental laboratories for research work.

(c) The establishment of a chain of quarantine stations, hospitals and housing barracks along the eastern front.

(d) The operation of epidemic field columns in connection with the hospitalization of cases.

(e) The furtherance of and establishment of public baths and bathing and washing places.

(f) The compulsion of all persons travelling to show certificates of cleanliness before being permitted to enter railway trains.

(g) The disinfection of all railway passenger trains.

(h) The establishment of training schools for nurses.

(i) The encouragement of young college students to take up the study of medicine.

POLAND NEEDS TO CARRY ON AN ACTIVE CAMPAIGN AGAINST TYPHUS

(1) Sanitary supplies such as soap in amounts measured by thousands of tons, hospital linen and underclothing by the hundreds of thousands of pairs, hospital equipment and etc., for thousands and thousands of beds.

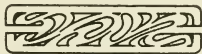
(2) Food and fuel.

(3) Doctors and nurses.

THE AMERICAN TYPHUS FEVER EXPEDITION

This is the only relief expedition sent to Poland expressly for the purpose of working with typhus fever. It is strictly an army organization, its personnel being members of the Regular Army establishment and was ordered to Poland by the Secretary of War by direct orders of the President of the United States. The organization has been operating in Poland for the past seven months. Originally, there were 32 commissioned officers and 500 enlisted men in Poland, but this number has since been reduced.

The present personnel are quite familiar with the typhus situation and realize the importance of the work to be expected of them together with the accompanying dangers, nevertheless all have volunteered to remain and are working hard preparatory for an early spring campaign. All officers and enlisted men are familiar with the different phases of this work and customs. Some of the personnel are operating the large motor repair plant in Warsaw, which is believed to be the most complete of its kind in central Europe. Others are operating bathing and delousing railway plants; others installing plants for the disinfection of railway cars, which are great sources of typhus fever; other members of the personnel are on duty at the different quarantine stations and district headquarters. all are doing their best and working hard for the cause.



A RATION FOR EMERGENCIES

BY LIEUTENANT COLONEL P. C. FIELD

Medical Corps, United States Army

THE War Department, from replies to the letter from the A. G. O., dated February 14, 1920, subject "Emergency Ration," has undoubtedly obtained a résumé of opinions, more or less hurriedly written, regarding changes in the reserve and emergency rations.

It is a difficult task to obtain an agreement between any two U. S. Army officers, that the present reserve ration is entirely satisfactory. It is equally difficult to obtain an agreement as to the necessary changes in the components of this ration. On the other hand, there is little or no opposition to the opinion that, for about eighteen years, all attempts to obtain a suitable emergency ration have failed. It becomes a question whether the idea of an emergency ration, as distinguished from a reserve ration, should not be finally abandoned and all efforts be centered in so changing the reserve ration, in components and method of transport, that the resulting ration may be not only in reserve but available and suitable for use as an emergency ration.

In controversial subjects, an unusual suggestion often results in active opposition, and in the expression of this opposition, valuable ideas may be obtained. It is with this hope that a few suggestions will be made.

The War Department asked the following questions:

1. Is the present reserve ration (par. 1205-3 A. R.) satisfactory?
2. If unsatisfactory, what changes are recommended?
3. Should an emergency ration be substituted for the reserve ration carried by the soldier?
4. If some form of an emergency ration is considered more desirable, state the general characteristics of the type so recommended.

It may be safely assumed that many officers finally decided to officially answer the first question in the affirmative, because of the disinclination to criticize when the latter might not be considered constructive criticism. If the first question is answered in the affirmative, questions 2, 3, and 4 become relatively unimportant, and a future American army will find itself, during prolonged combat, in the same unfortunate condition as did elements of the A. E. F., when their field ration supply failed. Such individuals or units had no emergency ration, the often issued 6-lb. can of beef had been too heavy to carry on the person and their condiment cans, containing the sugar and coffee, had been lost or had not been carried in the reduced packs used in combat.

Having decided to answer question 1 in the negative, the second question must be answered. It has been well said that "a field ration must be compounded keeping in mind three aspects—the physiological, the psychological and the practical." The suggested changes will be stated and then viewed from the above mentioned aspects.

(a) Eliminate canned roast beef as a possible substitute for bacon. Many men detest it. They have to eat it cold, with its large fat content, under modern combat conditions of great fatigue, prolonged exposure and consequent lowered resistance, and under these conditions it is one of the causes of indigestion and diarrhea, with a greatly increased non-effective rate particularly in partly trained and unseasoned troops.

The bacon component of the reserve ration is popular and can be eaten for prolonged periods, if necessary, without disgust or symptoms of intestinal indigestion. The U. S. Army's experience with the bacon component of the reserve ration in front line combat operations is not great because the canned beef substitute has usually replaced the bacon. It has never been issued so that the individual soldier could carry his individual supply of bacon. It cannot be seriously considered as a dependable part of a real reserve ration until it is issued in a form easily carried by the individual soldier and quickly cooked. This means sliced bacon in containers. As a component of a reserve ration, it has the disadvantage that it must be cooked and is more difficult to obtain in sufficient quantity for large armies. If a substitute for bacon is necessary, it is suggested that many officers and men would prefer canned corn-beef hash to canned roast beef.

In considering the meat and coffee components of any ration, it must be remembered that in modern combat no fire, which gives a flare or any smoke, is allowed with front line troops and fires are prohibited behind combat lines to prevent discovery by the enemy.

(b) Eliminate the salt component. It is not needed in a reserve ration.

(c) Eliminate sugar, granulated, carried in the condiment can. It is wasteful in that form and the individual supply of this component of the reserve ration is often used by the men to augment the ample sugar allowance of an issued field ration; hence is wanting when a sudden failure of the field ration supply necessitates dependence upon the reserve ration alone.

Before the World War, sugar substitutes were condemned as dangerous, but in the absence of sugar were demanded by officers and men of the A. E. F. in France, rather than drink their coffee unsweetened. European nations used sugar substitutes during the war, and, to date,

no warning has been given against this use because of any result of said use by millions during long periods. It is therefore suggested, if a modified reserve ration is to be retained and the emergency ration abolished, that a sugar substitute in pellet form be supplied in place of granulated sugar, and be carried in the compartment of the condiment can now occupied by salt. With this change, the sugar compartment of the condiment can becomes available for other uses.

(d) Add a cocoa preparation, unsweetened, to the above modified reserve ration, and carry it in the present sugar compartment of the condiment can.

This compartment will hold, by actual measurement, 120 grams (about $\frac{1}{4}$ lb.) of a commercial brand of prepared cocoa. In individual cooking, the cup of the canteen would be used for preparing and heating this cocoa. With the fluid level $\frac{1}{2}$ inch. from the rim, this cup will hold 500 c.c. (1 pint) of fluid. Each man has a field spoon in his mess kit. One such spoonful, heaping as is the American custom, of ordinary commercial brands of cocoa, weighs 10 grams (about 3 drachms). One heaping kit spoonful of cocoa, plus a pellet of saccharin, makes a very acceptable hot drink of a kind which seems to be craved by the American soldier.

Above figures show that each soldier would have in his condiment can, for emergency use, sufficient cocoa to make 12 pints of a nutritious, stimulating and agreeable hot drink, in addition to the coffee component. This additional supply of a hot liquid food is believed to be a distinct advantage under combat conditions of prolonged nervous strain, shock of high explosives, great fatigue and prolonged exposure, particularly in cold, wet weather. It would lessen the use of unsterilized drinking water.

Association and service with the British divisions apparently did not overcome the average American's aversion to tea, although officers testify that their men gladly accepted the hot tea for the sake of having a hot drink.

The small loss of caloric value from the elimination of sugar would be more than offset by the addition of $\frac{1}{4}$ pound of cocoa. The use of chocolate, as such, is deemed inexpedient because chocolate, without the addition of milk, is not as palatable as cocoa preparations and is not as easily prepared for use under adverse conditions. Cocoa has the reputation of being chosen by civilians whose duty or pleasure calls for strenuous field work.

(e) Replace the coarsely ground coffee component by a powdered coffee preparation similar to the "Instant Coffee" commercial brands.

The average young soldier is apt to use too much of the coarsely

ground coffee, in individual cooking, trying to obtain a strong decoction with little fire. The powdered preparation does not need any prolonged application of heat to extract the stimulating caffeine. As no alcoholic stimulant will ever be an issue to an American army, and some stimulant is desirable under combat conditions, coffee should be retained in all rations, but in a reserve or emergency ration should be in a pulverized form. If solidified alcohol is issued for use in emergencies, when ordinary fires are prohibited, the powdered form is necessary to save the alcohol.

(f) Add solidified alcohol as an emergency fuel.

The most common reason, against any change in the present reserve ration, is that given by those who claim that the canned beef substitute and the hard bread can be eaten "cold" when ordinary fires are prohibited or fuel is not available. This claim is very true, but our experience in France warrants the question whether the combination of "canned willie," hard bread and chlorine water is the best that we can do. This food and drink may prevent symptoms of starvation but it does not sustain morale. The necessity of having *hot* food, both for the well and the wounded, was never before so fully realized as in the late war. Heat alone is a great stimulant to the weary nervous system of overworked men and undoubtedly upholds morale. No morale, even that bred by national patriotism and propaganda, will continue well nourished with the indigestion of the above cold combination, even if it is declared entirely sanitary. Solidified alcohol volatilizes but does not liquify unless heated. Enjoying merely the odor ought not to constitute a breach of the prohibition amendment. No flare or smoke is produced by burning alcohol.

The physiological aspect of the above modified reserve ration is believed to be better than that of the present issue. In a recent article on this subject, it was shown "that 16 ounces of hard bread and 10 ounces of bacon gives the soldier 90 grams of protein with 3,600 calories per day with a total weight of only $1\frac{3}{4}$ pounds as compared to the garrison ration, weighing approximately $4\frac{1}{2}$ pounds, and delivering 4,400 calories." The reserve ration allows 2 ounces more of bacon than the above calculation of values. This additional bacon, plus the $\frac{1}{4}$ pound of cocoa, would bring the caloric value of the proposed modified ration to about 4,000, after deducting the loss of about 300 calories, due to the elimination of granulated sugar. Bacon fat and the fatty ingredients of cocoa are certainly more digestible than the fat of beef as shown by their use in the feeding of children and convalescent adults. With digestion retarded by the prolonged emotion, great fatigue and nervous strain of combat, the more digestible fats are indicated, if we

would lessen the diarrhea of unseasoned troops, which diarrhea cannot be entirely charged to the use of unsterilized water. The argument that cocoa is not needed with coffee, fails to recognize the fact that, in addition to being a stimulant, cocoa has double the food value of the sugar which it replaces. The salt component merely continues the average American's habit of using too much salt. The production of an artificially increased thirst results in excessive drinking of water, particularly during marches, with increased use of unsterilized supplies. The additional hot food and drink, made possible by the proposed fuel component, will be a great help to men when ordinary fires are impossible and the weather is cold.

The psychological aspect of the present reserve ration is believed to be improved by the proposed changes since it meets the criticisms of both officers and men who have served under the most varied conditions of field and combat conditions. The psychological state of a soldier may be defined as what a soldier thinks, and what affects his trend of thought.

In the individual, it is his mental attitude. In a new organization, it is a little less than mob psychology until training has proceeded far enough to cause a common trend of thought which latter was formerly called "esprit" but now is known as "morale." The mental processes of a young soldier and the things in his environment effecting these processes, are not the same as exist in the more mature officer or non-commissioned officer. Hence, forcing an army of young men to eat food which disgusts them, even if it sustains and nourishes them, lowers morale. Wars are not fought to a finish or armistice by well trained and disciplined soldiers, but by a citizens army of youths.

Average American youths are overfed and when placed on a restricted ration, demand food which is agreeable in appearance, smell and taste. Emergency rations, as issued in the past, have failed because they were repulsive to most men. Any successful ration must fill, to a reasonable degree, that aching void situated in front of the solar plexus, which bacon (or its substitute) plus hard bread, with the fluid of hot coffee or cocoa, will do. Heat is not only needed for the preparation of the meat, coffee and cocoa, but also to offset the nervous shock of modern combat and for the treatment of surgical shock in the severely wounded, awaiting transportation to field hospitals.

The practical aspect is of the utmost importance. Can this modified ration be carried on the person, and therefore be available for individuals or units, for short periods, when the field ration cannot be issued?

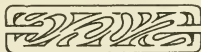
Conditions will arise in every war when rolling kitchens will be stalled, "marmite" cans not available and fires impossible. It is be-

lieved that this modified ration is practical for individual use and transportation in bulk for issue. Bacon for emergency use should be issued sliced and canned.

The fuel component is the most difficult to make practical. Solidified alcohol was issued to some combat divisions of the A. E. F., in France and officers with these divisions report that it was of decided benefit and zealously conserved. Fuel necessitates dry matches. During the recent war, Americans discovered that matches could become scarce. Matches in the pocket are generously used and loaned. Wax matches in the other water-proof end of the condiment can would be more likely to be on hand when an unexpected emergency made the emergency ration the only available food. The reserve ration components must be issued in receptacles small enough to be carried in the reduced pack during combat and the future issue of a 6-lb. can of meat must be prohibited. Observation of certain units of the A. E. F. in combat showed that the present reserve ration, as issued and carried, was often used as an additional or surplus ration. If this ration is intended to be held in reserve and available in emergencies, its use must be strictly limited, and officers and men trained accordingly.

Question 3, when viewed from the practical aspect, must be answered in the affirmative, provided the new emergency ration provides real food and is not issued as a part of the field ration. Paragraph 4 of A. R. 1205 makes the reserve ration a part of the field ration, and when the field ration supply is interrupted, the reserve ration supply is also. On the other hand, the same question should be answered in the negative, if any of the old forms of emergency ration is to take its place.

For the reasons already given, question 4 may be answered in the affirmative. The suggestions offered for the modification of the present reserve ration are intended as an answer to this question.



COMMENT ON REHABILITATION METHODS FROM THE NEUROLOGIC VIEWPOINT¹

By R. SHEEHAN, M.S., M.D.²

IT is contemplated to have the U. S. Public Health Service assimilate the medical work necessary for the occupational determinations made by the Federal Vocational Board. The portion of this productive of the most difficulty is that which will be referred to the Neuropsychiatric Section, so it seems pertinent to take up the various factors to be considered, such as the difficulties likely to be met and the measures to be taken if these are to be successfully solved.

It is hoped that any criticism will be regarded as constructive; much already made, which has had to be contended with, has been otherwise, and too obviously ulterior in its motivation.

As the problem presented in the New York District is representative, it will serve as a basis upon which observations can be made. In each district, of course, there will be special factors requiring individual consideration. Here, for example, the large element of population which is of recent foreign extraction needs selective estimation, because of the well-known racial predispositions to the nervous disorders. In this respect we have been fortified in our previous conceptions of the psychology of the Hebrew, and impressed by characteristics of the Italians of which we were not entirely aware.³ However, this opens too large a field for present discussion; the conclusions made in this regard certainly should be capable of verification elsewhere, and no doubt when assembled, capable of utilization in the industrial field.

On December 4, 1919, the District Medical Officer of the Federal Board in New York addressed a letter to the Supervisor, 2nd District, U. S. Public Health Service, following a recommendation from his own supervisor, in which he asked that a medical officer should be appointed to look after the men at the Seward Park Rehabilitation Center. He stated that this was a place where there were approximately 350 men in training, a number of them being borderline mental cases, as this school comprised to a large extent only the "misfits" and the "try-outs" whom the Vocational Board had had great difficulty in placing satisfactorily.

¹ Read March 20, 1920, at a meeting in New York of the Medical examiners of the U. S. Public Health Service, for the 2nd District, which includes the states of New York, New Jersey and Connecticut.

² Lieutenant Commander, M. C., U. S. Navy; Psychiatrist, Third Naval District; Consulting Neuropsychiatrist, U. S. Public Health Service, New York.

³ A. Myerson: "The Nervousness of the Jew." *Mental Hygiene*, Vol. iv, No. 1, January, 1920.

A. Sverski: "Mental Hygiene, An Urgent Need for Jewish Community of Greater New York." Author's Publication.

The students there are taught from 9 a. m. to 1 p. m. at the Educational Alliance, 197 East Broadway, and from 3.30 to 6.30 p. m. at the Vocational School, corner 10th Street and Avenue B, where they are under educational supervision.

The problems at this school are of such a nature that it had soon become apparent, because of the frequent occurrence of mental handicap, that it would be necessary to have the advice of a physician, skilled in behavior reactions and occupational determinations, in order to make the proper dispositions.

It was the intention to utilize this center for trying out men at their former vocations. It was also requested that the medical officer assigned should report the progress of students under special observation, these reports to be made at least once a month. It was obvious that this would require a psychiatrist. Accordingly, Dr. Spencer C. Strauss, who had served under the writer in charge of the Psychiatric Unit, U. S. Naval Training Station, Pelham Bay, N. Y., a well-qualified neuropsychiatrist, with particular training along the lines indicated, especially in psychometry, was assigned to this school.

Observations were made, from a medico-psychologic angle, to determine whether the men coming to the school for training could be more or less accurately placed at their tasks, and whether methods could be applied whereby their mental capacities and developmental possibilities could be correlated sufficiently to assist us in our task.

One difficulty impairing the value of psychological placement in this instance was the fact that every man presenting himself had certain definite physical limitations, due to injuries. These narrowed his sphere of possible activity, so that, even if a satisfactory psychological and psychometrical determination of his vocational aptness were made, the results would always have to be secondary, in their importance to this handicap of physical disability, in the final selection of vocation, inasmuch as the physical element is fixed, while the mental coefficient is extremely variable and subject to considerable change under the influence of ordinary mental training, *i. e.*, educational measures.

This factor, the mental training, may produce considerable changes in this instance, because fully 90 per cent of the candidates were practically or totally illiterate.

This tended to render the routine forms of psychological examination very unsatisfactory. The usual mental tests were insufficient because of the candidates' illiteracy, and, in many instances, the lack of knowledge of the American language; these factors also made simple performance tests of little value. The best result obtainable was only approximate, which, of course, cannot be relied upon for accurate determinations.

We must assume that men of a markedly defective mentality could not have gone through the Army, nor could many have passed the original observation of the army psychologists. It is presumable that all of these men went through training, and by far the greatest majority saw actual combat. It would seem that those of defective mentality would have fallen by the wayside, and, as a matter of fact, in the separate examination of about 100 individuals, only one intelligent defective was found, a moron. These examinations were not made by any routine method, but by what appeared to be the best means suited to the individual, of eliciting the information required.

The problem of appropriate shop placement was interesting. The shops include tailoring, drawing, sign painting, printing, carpentry, plumbing, machine work and electric wiring. These were visited regularly, and the work studied with the idea of discovering whether they varied enough in their respective psychological demands to make the establishment of appropriate examinations for admission a possibility.

As a result of these observations it does not seem possible to determine beforehand whether a man is better fitted psychologically for one shop or another. The chief difference in the demands are met, satisfactorily or not, by the individual who in each case departs from any general rule according to his particular wound disability. It is evident that they must be judged and estimated individually.

Further, the factor which most of all makes for success in occupation is the question as to whether or not it is congenial. It is readily apparent that there are no means available by which this can be determined for the individual. The most that can be done is to say whether he is better suited to one trade than another. The man must have the advantage of actual contact with the particular work before he can say in which field he will be most satisfied. For mental tests alone are absolutely unreliable, as accomplishment not only depends upon mental ability, but is subject to the influence of surroundings and by the emotions of hope and fear, success and disappointment, so that the occupational test itself is the only safe criterion to determine the path along which is to be obtained the most efficiency, and this must be the one along which the candidate shows the most capability and which will always be that allowing the greatest development of his individuality. Because of this, candidates should be given a trial, or as many trials as they choose within a time limit, then allowed to express their own choice. This seems to be the fairest way.

Of course, much time is wasted by the men shifting too frequently from one shop to another. This in a large measure is, in most instances, due to poor judgment and reflective of the illiteracy above noted. Many

of the men by heredity for generations have been common laborers. They have little idea of what sheet metal work means, nor do they know the difference between sign painting and mechanical drawing. They must of necessity shift again and again before they find their place. Perhaps it would be better if they received three or four months of intensive common school training, with special emphasis laid upon trades and trade conditions and the various factors involved in skilled work before they are asked to choose their course. As it is now, the individual too often regards the final monetary return—that is, the wage paid by this or that trade—as the criterion of choice. It seems a mistake to insist upon a man being definitely at work in a shop at the end of thirty days. This ignores the fact that very often the man concerned is illiterate.

Further, it is wrong psychologically, as well as practically, for the student to realize that he can change his selection as often as he likes before he finally decides upon his work. Sixty days are allowed for this shifting process, but this carries with it the privilege of renewal. As a matter of fact many of the men have been in the shops for months without any approved recommendation for a particular trade training having been made. It would seem far better to give a longer period to solidly inform them of the various working conditions and allow only a narrow time limit for the choice; that is, reverse the present time distribution, making it sixty days for information and thirty days for choice.

Appreciation of the concrete from the beginning makes for rapid and real success in any work. The habit of starting at this and that, and leaving unfinished the things begun, caters to a positively vicious psychology. This is especially true when you are trying to convert those who have always been followers of crude labor into skilled artisans. The presence of such a try-out worker, with his lax attitude, certainly has a very deleterious effect upon those men in the shop who have already definitely selected a trade.

Another very important factor is that many of the men are not at all anxious to come to a decision, because as long as they are under the supervision and care of the board their pay continues, and this in the majority of instances is far better pay than they ever received before.

Observation indicates that most of the individuals, with whom we are concerned in particular, come from a group most of whom have had no regular occupation. They are those who, because of illiteracy, language difficulty, intelligence defect, constitutional inferiority, or psychopathy, predementia praecox, and in several instances frank psychosis, have failed in this respect. It is characteristic, and one might almost say pathognomonic, of these types, that a section of their

careers shows that the sphere of occupation is fraught with the most trouble. Any psychiatrist knows that their histories reveal that they hold job after job for durations varying from a few hours to less than a year, all of which they lose because of their inadequacy and consequent inability to adjust themselves to the demands and circumstances of their environment.

All of these individuals who succeeded in getting into the service—many by their own effort, merely because of their desire for adventure and the irresistible impulse which seemingly prevents them from remaining fixed for any length of time and provokes their well-known peregrinations; others again being forced by the Selective Draft Act—are now, as a result of well-intentioned and beneficent legislation, brought under cognizance of the Federal Government. It must be realized that they will always have to be cared for at the expense of the tax-paying public, for in large measure their handicaps are inherent and unchangeable. Therefore it can be readily seen that we have to deal with a most difficult problem, one which the individual himself had never successfully handled and which heretofore has often resisted even well-thought-out educational and correctional methods. So that to improvise an adequate method of procedure to accomplish the purpose required should demand a personnel made up of well-qualified educators, and, of necessity, psychiatrists, assisted, perhaps, by psychologists, and further also those capable by experience of determining satisfactorily the demands of various occupations.

There must also be taken into consideration what is ordinarily looked upon as ambition, that is, the desire of the individual to take up a profession or occupation which appeals to him as being desirable, and this from several vantages, aside from the expected remuneration mentioned above. It is this factor which, so often through pride, influences parents of meager attainments, who by fortuitous circumstances have acquired means, to urge their sons to take up professions for which they are woefully inadequate. Occasionally they may apparently qualify, but they do so at such tremendous effort and achieve even moderate success with such difficulty that they cause themselves many discomforts, chagrin, and disappointments, and, if the stress is too great, even precipitate psychotic reactions.

Another fault which should be corrected, mainly because of its pernicious psychological effect upon the men in training, is the frequency of transfer from one rehabilitation center to another. Through this much time is lost. Six hundred men have entered this school since its opening in June, 1919, while today 300 are enrolled. Of the other 300, eight men are now employed in trades. The remainder,

292, have been shifted about, moving here and there. A group of 100 were sent to the College of the City of New York to be taught the rudiments of engineering. The foolishness of this is readily apparent when we recall the large percentage of illiteracy found.

The teacher, through skilful observation of the progress made in the training and educational measures, should be able to determine quite accurately whether a man is making normal progress or not. The psychiatrist should be able to assist this determination by excluding those manifestly unfit and without potential,⁴ also those who are proven inadequate by the available psychologic and psychometric measures. This should evolve the most practical method. Probably all candidates should be subjected to group tests. Through these a certain number might be eliminated. Also, when the instructor notices that a man is retarded and falls below the normal rate of progress to such a degree that he becomes an impediment, he could refer him to the psychiatrist for examination, who will find the reason for his retardation and be able to recommend the proper disposition.

Progress of an individual in any field of work does not depend alone upon his intellectual ability. His hereditary endowment and also his environment are concerned. This latter—where he lives, his food, his amusements, his associates—should be investigated, and, when at fault, adjusted. At present this side of the problem is markedly neglected. Often it will be among these faults that the reason for the psychiatric maladjustment will be found.

The consideration of the ordinary physical ills of the individual is important. Recently considerable effort has been made to care for these. It does not seem reasonable to expect these men, many of whom are crippled, to make a long journey from one of the schools to a hospital for treatment, a trip often difficult and at least time consuming. It is also objectionable for the same reason to require these men to go very far to have prescriptions filled. The effect of such traveling is surely deleterious. Frequently, because of these considerations, the men are negligent of themselves.

In this regard, it should be mentioned that at present there is no provision made for aiding the individual with the problems arising from illness in his home. Many of these men are married, and in many instances the man is compelled to act as nurse for a sick wife at the cost of lost instruction.

It is a fact that often 75 of the total 300 men are absent from the

⁴R. Sheehan: "Service Use of Intelligence Tests." U. S. Naval Medical Bulletin, 9, 194-200, April, 1915; "Exclusion of the Mentally Unfit from the Military Service." U. S. Naval Medical Bulletin, 10, 213-49, April, 1916.

school at one time for one reason or another. There does not seem to be any fixed way in which such absences are investigated. Illness is nearly always given as the excuse.

It is clearly evident that the whole problem is one in which the medical factors involved are so important that it must be considered largely from the medical viewpoint, with the psychiatric element preponderant.

Case after case comes to our attention where the man has been recommended for vocational training. He applies to the Federal Vocational Board and is placed. Through some defects in method, consequent upon a lack of proper appreciation of the potential of the individual, he finds himself unable to cope with the demands made upon him. His only means of escape is to be sick. In our particular field, this means a recurrence of the psychoneurotic symptoms which are often engrafted upon a constitutional inadequacy. These are claimed to be the original cause of disability, through which the candidate became eligible for training. In other words, the individual must perpetuate his symptoms in order to insure his retaining the benefits of compensation. The repeated recurrence of these situations is quite prejudicial to any constructive measures of treatment. It really ends in the production of a neurosis similar to the well-known litigation neurosis, that is, one which exists as long as there is an object to be attained.

When a man fails, he is examined by a physician of the Federal Vocational Board, who, appreciating, say, the evidences of the neurosis, refers him back to the Public Health Service for treatment or convalescent care. This results in the establishment of a vicious circle which can be only detrimental to the individual and provoke criticism of the agencies concerned, both by the man himself and the many organizations interested in his welfare.

Examples could be quoted at length, but several are quite representative, and will suffice.

Case A.—Since discharge from the Army this man has been under medical supervision in his home town. He had sustained a wound of the arm, not at all serious, and which completely recovered. However, he complained of "shell shock," and the symptoms were described as "cardio vascular asthenia." Because he did not show any improvement he was hospitalized, through the District Office, at the U. S. Public Health Service Hospital at Cape May, N. J. Here he proved himself disagreeable, refractory, not amenable to discipline, and provocative of so much disturbance that he was discharged as undesirable. He again appeared at the office and was placed in St. Francis Hospital, the Bronx, N. Y., where he was successfully operated on for hemorrhoids, which had antedated his entrance into the Army. He was then placed in the Pershing House, appearing regularly for consultation, as an out-patient. During this interim he applied to the Federal Voca-

tional Board for training. He had always had a strong belief that he was destined to be a vocalist and desired to have training to prepare him for such a career. The Federal Board did not consider this desirable, which provoked a marked reaction in the individual, and he was referred back to us designated as suffering from an "endocrinopathic disorder," with the suggestion that he be given further convalescent care pending his assignment to training. Now he complains of some heart trouble, and stated that he had consulted private physicians who had subscribed to this opinion. The Medical Board here reported "Examination of heart shows no enlargement or organic lesions. The pulse is rapid, at rest being 96 to the minute. Lungs normal."

Careful consideration of this case in its entirety makes us conclude that this individual is now in what was his normal condition prior to his entrance into the Army. There is no reason why he should not return to what he states was his occupation, namely, gasoline engine work.

His make-up is quite typical of a class above noted.

The citation of this case suggests another factor that has had to be contended with in the handling of the men belonging to the Neuropsychiatric Section, and which has, because of their make-up, been productive of most difficulty. This has been the interest taken by the numerous auxiliary agencies, most of which were augmented or established during the stress of war with the object of assisting, in divers ways, the men in the military forces. Their personnel has consisted to a great extent of women, who have grasped this opportunity as a means of outlet, and in many instances this has been compensatory. In the men suffering from the psychoneuroses they have found a fertile field for their activities, for this type has quickly responded to the sympathy and humoring which many times is the expression of the derailment of normal instincts, particularly the maternal, and which, because of the mechanism of these disorders, has invalidated efforts at treatment, through preventing the aimed-at restoration of morale, essential in the rehabilitation of the psychoneurotic.

Case B.—Occupation prior to entering the service was a steam-fitter's helper, at which he was employed for about five years. He entered the service September 22, 1917, and was discharged on September 16, 1918. On February 3, 1919, he filed a claim for compensation and subsequently for vocational training. He was placed in an electrical course on April 29, 1919, at Detroit, Mich. Because his parents reside in New York City he requested transfer to this district. On February 9, 1920, the New York office of the Federal Vocational Board advised him to take a course of steam-fitting and plumbing. Upon reporting to the place assigned he was diverted to a class in sheet metal work because the one for steam-fitting was already full. He worked at this assignment three days and then gave it up because he did not like it. It was then suggested that he take up work as a furrier. However, he never commenced training in work because, after conversation with the officer in charge of this course, he was advised to see the physician of the Federal

Board. This he did, and after examination he was referred to the Public Health Service with a letter recommending convalescent care until such time as he would be able to take up training.

In this instance we have an individual who is very representative of the class in which symptoms of neurogenic origin are provoked because of the difficulty of the situation in which they are placed. Here their efforts to acquire the benefits of training come into conflict with their inability to meet the requirements.

Case C.—This man had been assigned by the Federal Board to a course in truck farming in the State Agricultural School at Farmingdale, L. I. He stated that he had completed the theoretical course in this branch, and that "there is no chance to do truck farming with 3 feet of snow and ice on the ground, and they won't be ready for farming until April." It was ascertained that he had some difficulty with one or several women, which was productive of considerable emotional disturbance. He was referred by the Federal Board with a recommendation that he be granted convalescent care for two or three months.

Examination failed to reveal any evidence to warrant giving this man convalescent care. He was an ordinary colored man who was fully competent to pursue the course indicated by the Federal Board. He does not require convalescent care, but merely maintenance until he is able to pursue the work mapped out. This same problem has come up in many cases. However, taking care of the individual while the matter of his training is being decided or deferred should not be under the guise of treatment for some disorder from which he has recovered, or which is suggested. This method can be only productive of much damage through the resulting psychic traumata.

If the Public Health Service is to accomplish results by effectually handling the medical problems encountered by the Federal Vocational Board in their effort to rehabilitate men who have been in the service, we must, aside from the general medical considerations with which our section is not concerned, take up those which particularly come within our province, and which it is fair to estimate involve half of all the men under cognizance, and evolve a comprehensive approach. To accomplish this purpose it is recommended that—

1. All candidates be subjected to group tests.
2. Individuals selected through group tests, and those regarded by instructors as retarded, be subjected to intensive psychiatric examination; which should include a psychometric estimation, and careful consideration of all factors concerned in the individual's inability to meet the requirements of the training.
3. Opinion should be rendered which will enable a proper disposition to be made in each case, whether hospitalization, institutional care, ordinary educational measures, or that the individual is at what is his normality, and not amenable to or requiring vocational training.

4. To accomplish the above recommendations a convenient place should be provided, equipped with the necessary apparatus to perform psychometry. This should be conducted by a properly qualified and well-selected psychiatrist, who should have the assistance of a psychologist with the requisite experience in making the necessary estimations, and, if the scope of the work warrants, such clerical help as is necessary. Further, the psychiatrist should have the aid of the present Psychiatric Social Service, which may have to be augmented for this purpose. He should refer, as necessary, special cases to the Medical Board in the office of the district supervisor, or avail himself of the consultant provided as seems indicated.



THE INSIGNIFICANCE OF RECORDING CHEST MEASUREMENTS MADE AT THE NIPPLE LINE

BY COLONEL ROBERT M. CULLER

Medical Corps, United States Army

(With six illustrations)

THE SIGNIFICANCE of estimates of chest expansion made by the tapeline probably seldom arises in the minds of observers making physical examinations of students, applicants for life insurance, soldiers and sailors. Those who believe that circumferential chest measurements are of great value in physical surveys either have thought very little of the matter, or have accepted a chain of false premises upon which their opinions rest.

Attempts to modify views held through preconceptions, however erroneous, invariably excite antagonism. There are those who will violently defend false premises concerning every-day matters without taking the trouble to prove the truth to themselves. There are those, including medical men, who believe and cling to the idea that woolen underwear is advantageous, because it "absorbs the perspiration," yet these same persons cannot be induced to habitually use woolen towels to dry themselves after bathing, because they quickly find out that wool absorbs moisture but poorly and slowly. It is hoped that the points raised in this discussion may be admitted to the temperate consideration of those who decline to accept them as facts.

The practice of eliciting and recording the amount of chest expansion, at the nipple line by inches, is so common that both examiners and subjects believe this ceremony to be the basis on which opinions are formed as to the competency of the lungs, and where a respectable degree of expansion measured by the tape is elicited, both examiner and subject are satisfied and entries are made on a blank form which is interpreted to mean that the individual has respectable physical vigor and is suffering from no lung disease.

The size of the chest of a given individual depends upon the angle of attachment of the ribs to the vertical lines of the spine and sternum respectively. If there is acute angulation the chest is small; if the angulation approximates a right angle, the chest is at its maximum size. The various forms described in text-books as flat, barrel shape, pigeon breast and normal, depend not upon rib angulation but upon the curve made by the ribs as they pass from behind forwards. In the flat chest the ribs make a sharp curve between their terminal attachments; in the pigeon breast a lesser curve of the ribs gives a

long anterior posterior diameter to the chest with a corresponding lesser lateral diameter; in the barrel chest the curve of the ribs is such that the two chest diameters are approximately the same. These, and other classical forms, are immaterial as far as lung capacity is concerned, all being compatible with great lung power and bodily vigor, provided they are large enough, the size depending, as before stated, upon the angulation of the ribs with respect to the vertical line of sternum and spine. An acute rib angulation means a small chest no matter what its form is, while angulation approximating a right angle means a chest of wide capacity irrespective of form classification.

In young and undeveloped individuals we usually observe a small chest due to acute costal angulation. As the young man grows and develops the auxiliary respiratory muscles, this acute rib angulation becomes less with a corresponding increase in diameter of the chest. The chest development which follows proper physical training then is largely due to the elevation or increase in rib angulation, the maximum being reached when the ribs are at right angles to the spine and sternum. This increase in the diameter of the chest is coincident with a proportionate increase in the size and function of the lungs themselves.

An underdeveloped man then may have a wider chest expansion than one who has attained a maximum degree of development. Paradoxical as this may seem at first glance, actual measurements taken into consideration with other developmental changes brought about by physical training, will convince the most skeptical that the tapeline index of chest expansion taken at the conventional level of the nipple line is of no great importance in physical examination and that the diameter of the chest at full inspiration merely represents the potentialities for development in the individual. The highest reading of the tape at the nipple line is an index only to the normal size of the chest when the ribs are held at or near right angles by muscular action.

As middle age approaches, the rib articulation participates in those changes tending toward lessened mobility of joints. If chest mobility were any real index to lung elasticity and competency in general, the lungs of men in middle life would be less potent in proportion to the lessened mobility.

While the first five ribs may be raised slightly by the outward pressure of the lungs during inflation, a greater influence in this direction is exerted by the auxiliary muscles of respiration, notably the pectoralis major and minor, the first of which by its normal tonus raises the sternum *en masse* while the latter exerts direct action on the third, fourth and fifth rib, respectively. If these muscles are

highly developed, their action will elevate the ribs, down to and including the fifth, as far as they will go, therefore at the level of the fifth rib, we can look for little increase in size of the chest on full inspiration in the already well developed and muscular subject. See Fig. 1, which shows action of muscles concerned in elevation of ribs at and above the nipple line, also demonstrating the fact that the tape at the nipple line passes over the latissimus dorsi at its widest point.

The discussion so far has ignored the action of the diaphragm whose function is almost entirely respiratory. This muscle is such an important part of the scheme of respiratory movement that, with all other elements fixed and in abeyance it can and does carry indefinitely the whole burden of inflation and deflation of the lungs. In Fig. 2 observe all muscles of the chest wall and shoulder girdle contracted, thus immobilizing the ribs, yet full respiratory function is maintained while the man supports a heavy weight. When respiration is carried on solely by diaphragmatic excursion, there is no change in the diameter of the chest at any time during a respiratory act, hence no chest expansion in terms of inches can be recorded. It is plain, then, that the chest expansion estimated in the usual manner by the tapeline is made up of only the minor elements of respiration and does not include results of diaphragmatic action.

The conical shape of the lungs and the arrangement of their several lobes; the fixed apex and immovable base of the chest cavity as a whole, all indicate nature's expectations in the expansion possibilities of the lungs. A cross-section through the chest at the nipple line does not pass through lung tissue of large dimensions, and yet at this point we habitually measure by a tape the performance of organs whose greatest bulk lies below this plane and whose widest expansion excursion is at right angles to it.

The pyramidal shape of the chest cavity, with its base supported by a great undulant muscle, indicates that the normal respiratory movement must be expressed in a downward direction to a greater degree than laterally. Are we then permitted to believe that lateral expansion of the lungs plus the size of the superimposed muscle constitute a standard of lung capacity to be expressed in figures of the slightest value to anyone reading them from a blank form?

A young recruit may measure 27 inches at the nipple line on expiration and $30\frac{1}{2}$ on inspiration, while an older well-developed man may measure 40 and 42 inches, respectively. Proportionately to the size of the men and actually, if one judges by figures alone, the first man has a higher lung index than the second man. This we know is not the case, since the older developed muscular man has

the acute rib angle widened by elevation through muscular action. It is clear, then, that a standard based on linear measurement of the circumference of the chest at a fixed point is of little value when applied to men of all ages and at all degrees of development. Such a standard ignores the changes which take place in the size and mobility of the chest through physical training which affects the voluntary auxiliary muscles of respiration, at the same time it ignores the office of the diaphragm whose performance of function in no way alters the size of the chest at the nipple line at all.

Well-developed muscular men may feign to have a great expansion securing a high reading by contracting the pectoralis groups and the latissimus dorsi muscles as in Fig. 3. As a matter of fact, the man shown in this picture has less chest expansion in inches at the nipple line than the recruit shown in Fig. 4, yet no one is likely to be uncertain which man has the greater lung power.

Fig. 5 illustrates the elevation of the ribs by muscular action with obliteration of the acute angulation of the costae, at the same time the diaphragm is arched upward to expel all but residual air. The picture is taken at the end of expiration.

Fig. 6 shows the same man at the end of inspiration. Note that the chest diameter has not noticeably increased in size at the nipple line over Fig. 5, but the epigastrium is made prominent by the low excursion of the diaphragm.

Actual lung disease may not greatly modify the figures obtained by the common method of computing chest mobility at the level of the fifth rib. I have in mind a man suffering from active tuberculosis at the apices whose tapeline readings were "normal." Another man, under my observation at this moment, measures 34 inches at expiration and 37 at inspiration at the level of the fifth rib, yet he is suffering from diaphragmatic pleurisy and has been tapped twice.

I recall a case of huge liver abscess complicated with a basal pleurisy whose measurements taken in the conventional way would fill the average man with pride and satisfaction—indeed, in this case the extreme mobility of the upper part of the chest was an *indication* of disease in the lower portion, the high reading of the lateral expansion being compensatory for the immobility of his diaphragm.

When a chest measurement is made with "tape well up under the arms," the line passes over the pectoral groups of muscles and the latissimus dorsi (see Fig. 1), therefore this reading is the sum of the actual size of the chest plus the bulk of the above-mentioned masses. Laying aside for the moment the question of mobility, in a poorly developed or emaciated individual we can obtain a reading on the

tape more nearly representing the actual size of the chest than we can in a man whose shoulder girdle is muscular. Adding to this observation the fact that the pectoral muscles keep in extreme elevation the ribs down to and including the fifth in the muscular subject, we can expect little excursion outward on deep inspiration.

While the pulmometer may be the only means of truly determining the capacity and competency of the lungs, it is not always practicable to use such a complex instrument. A tapeline estimate, if it can be made to mean anything and not assume too much, is advantageous in physical examinations on account of its convenience and absolute availability. If the tapeline is passed around the chest at the level of the ensiform cartilage, it will fall below the great muscle masses of the upper part of the chest, below that part of the chest influenced by their action, below the largest part of the latissimus dorsi, and will be on a level with a plane passing through a bulky part of the lungs themselves. While measurements at the level of the ensiform will not constitute an absolute index to lung capacity and power, yet such measurements will exclude factors which make measurements at the conventional level of little value.

Circumferential measurements at any level, however, will never bring to light defects due to asymmetry. A good typeline reading recorded on a blank form will not show comparative immobility of one side of the chest with corresponding compensatory mobility of the opposite side. If taken at the level of the ensiform cartilage the degree of mobility will include part of the affects of diaphragmatic action, since inflation of the lungs at their basis is largely brought about by the downward movement of the dome of the diaphragm. This consideration alone reflects the advantage of recording chest mobility at the level of the ensiform rather than at the nipple line.

Conclusions.—1. Lung capacity and competency cannot be estimated by a tapeline nor actual lung disease excluded.

2. The degree of chest expansion or mobility, expressed in inches on reports of physical examinations, are of no value except to suggest developmental possibilities in the immature.

3. The form of the chest in young men is immaterial, since all forms can be increased in size by rib elevation through muscular development. None of the classical chest forms are incompatible with great lung power and physical vigor.

4. If chest mobility is to be recorded by inches, the measurements should be made at the level of the ensiform cartilage.

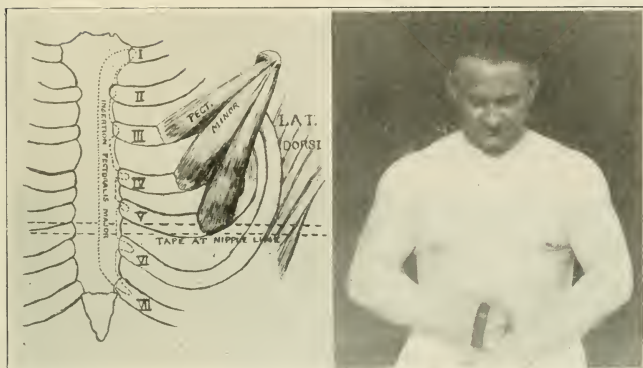


FIG. 1.

FIG. 2.

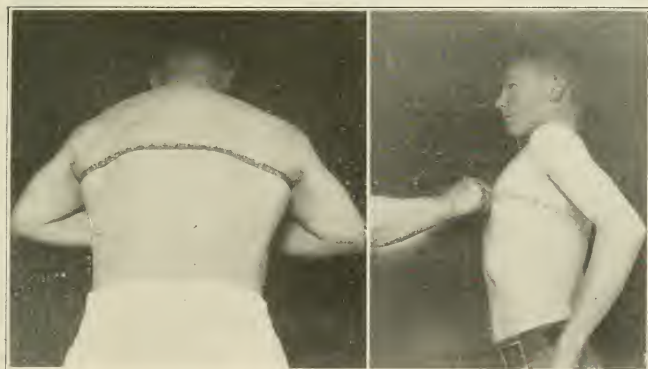


FIG. 3

FIG. 4

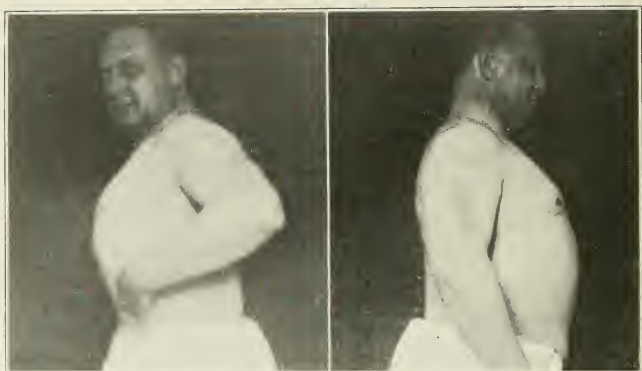


FIG. 5.

FIG. 6.

THE RELATION OF DEFECTIVE MENTAL AND NERVOUS STATES TO MILITARY EFFICIENCY

THE WELLCOME SECOND PRIZE ESSAY, 1919

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THE importance of the relation of defective mental and nervous states to military efficiency could scarcely be exaggerated. Approximately 2 per cent of all the men examined for the draft were found to have nervous or mental diseases or defects. Out of 442,275 rejections for physical disability occurring in the draft, 24,514, or 5.54 per cent, were for "Mental Deficiency," and 23,728, or 5.36 per cent, were for nervous or mental disorder, or a total of 10.9 per cent of all rejections were due to defective mental and nervous states. The percentage of mental deficiency was $6\frac{1}{2}$ cases for each 1,000 men examined; add to this that 18,620 were exempted as "morally unfit" and we find that a grand total of 66,862 were considered unfit for military service for intellectual, emotional, or moral defect or disease.

All this, however, takes no notice of the large number of cases occurring later during the war. After the battle of Chateau Thierry, 10 per cent of the American casualties were for mental or nervous conditions. Even after January 1, 1919, when our troops were being evacuated from France as rapidly as possible, and when all question of further fighting had passed, admissions to Base Hospital No. 214, the collecting and evacuating center for mental and nervous cases in the A. E. F., averaged about 800 a month.

I have been unable to get hold of any authentic figures of the incidence of mental and nervous diseases in other armies. We have, however, every reason to feel that the incidence was much greater than in our own. The figures commonly quoted by British neuropsychiatrists before the armistice were to the effect that between 40,000 and 50,000 cases of mental and nervous diseases had been discharged from the British Army. This, of course, does not count the thousands of cases which were not discharged from the army but which were continued in the service.

These figures are sufficient to show that we have a problem worthy of thorough investigation and study, and one which vitally concerns the military efficiency of our army. Mistakes in the treatment of this problem will be costly. A proper solution of it will result in a better and stronger army.

To secure the best and strongest army possible, every available man must be used. Men should be used in the capacity for which they are best fitted, and men unfitted for military service should be eliminated at the earliest possible moment, preferably when examined for admission to the service. It is thus apparent that to secure the maximum efficiency we must eliminate all unsuitable cases of mental and nervous disease as quickly as possible and must use all suitable cases and use them in the positions for which they are best fitted. Our problem then becomes: (1) What types of nervous and mental states are totally unfit for military service? (2) What types are capable of full and efficient service? (3) What types are capable of limited service?

This problem having been solved, and the unfit mental cases having been eliminated, our next problem is to keep more cases from occurring. Although the examinations made by neuropsychiatrists disclosed a total number of nervous and mental cases of over 72,000, only 88 per cent of these cases were recommended for discharge, which means that, in the opinion of the examiners, 12 per cent of these cases were capable of doing military service. It is thus evident that our army will, and must always, contain a considerable number of both actual and potential psychopathics, neurotics and defectives. We are concerned, then, in what can be done to keep these individuals at their highest level and to prevent their breakdown; we are also concerned in the proper method of treatment in case of mental or nervous breakdown occurring in the service; and, finally, we are concerned in what prophylactic measures can be taken to prevent the occurrence of such a high percentage of persons unfit for military service.

It is a fact which is not always fully understood that the changes from civil to military life demand a great many new adjustments from the individual and alter his ways of living very materially. The average individual, on his entering the Army from civil life, discovers two things which are especially difficult for him to adjust to: first, the loss of his individuality; second, the surrender of his personal liberty. He is made to feel that he is merely a cog in the machine; he is made to feel that his own individuality is of but slight importance. He is compelled to give up rights and privileges which he has enjoyed all of his life, and which he has felt himself justly entitled to. While all this is a necessary part of his training, it must be recognized that it puts a great strain on an individual's powers of adjustment, especially if his habits have been to the contrary of those demanded by military life. Furthermore, there are always a number of apparent meaningless rules and petty trifles which the newcomer often finds upsetting and which he often rears against. Quite frequently he is among entire strangers, and he may be quite un-

accustomed to being away from home. But no sooner has he commenced to adjust to these demands when still more are added—various responsibilities are thrust upon him. He is often compelled to undergo certain hardships which he has been quite unaccustomed to, and, finally, he may be subjected to the dangers of death or permanent disability.

Mental disease is a failure or a difficulty of an individual to adapt himself to his environment. As we have seen, on entering the Army, an individual must make a large number of new adaptations. These new adaptations are, from their very nature, difficult ones for the mentally defective, the neurotic, or the psychotic individual to make. It is therefore quite obvious that the vast majority of nervous or mental cases fail completely when all these new adjustments are thrown on them. It will be found, however, that there are a few individuals who will welcome relief from old adjustments and old failures and a chance to start in new. It will be seen, thus, that while the vast majority of mental and nervous states will be unfitted for military service, we will find a few benefited by it and we must try, if possible, to use every such case.

Concerning the demands of military life, we find that different branches of the service make different demands on the individual. We find that individuals are able to adapt themselves to one branch of the service where they may be entirely unable to adjust to the demands of some other branch. Many psychoneurotics and constitutional inferiors have made good stretcher-bearers or hospital orderlies, where they may be made to feel they are not taking life but helping to restore it. Many erratic youngsters made good aviators when they could not adapt themselves to ordinary discipline. Many morons made good in labor battalions but would have been rank failures in combatant service.

While the Army is made up of such branches as Artillery, Cavalry, Infantry, Signal Corps, Quartermaster Corps, Engineers, Medical Corps, and Air Service, for our purpose we can divide it into three parts; combatant service, non-combatant service, and technical branches. The technical branches may be either combatant or non-combatant service. We find that the demands for combatant service are a healthy body, an ability to stand hardships and discipline, and most of those qualities which are commonly considered as soldierly. The demands of non-combatant service are less exacting—the hardships and strain in severe warfare are infinitely less. In some parts, the adaptation is but little more than required of ordinary civil life. The technically trained branches require as their first requisite a knowledge, or ability

of acquiring knowledge, of that special branch to which they belong; thus the Medical Corps must know of medicine, the Engineering Corps of engineering, the Aviation Corps of aviation, and so forth. After this technical knowledge they will then fit into the combatant or non-combatant service.

We may next pass on to a study of various mental and nervous states with which we are concerned. By "defective mental and nervous states" is meant any defect of the intellectual or emotional spheres, whether congenital or acquired. The most important of these are:

1. Mental deficiency, including all forms of feeble-mindedness.
2. Psychoses.
3. Psychoneuroses.
4. Organic nervous conditions.
5. Constitutional psychopathic inferiority.
6. Question of malingerers and conscientious objectors.

Mental deficiency is one of the most important conditions to be considered. It is widely prevalent. The very conservative estimates place mental deficiency as being 4 per 1,000 of population. The army examinations showed a higher figure; $6\frac{1}{2}$ men per 1,000 were found to be defective mentally, *i. e.*, 24,514, or 5.54/100 per cent of all rejections. Thus more than one out of every twenty rejections was for mental deficiency.

Mental deficiency may be described as a lack of intellectual power, which is usually, but not always, congenital. The condition varies in degree from that of extreme idiocy to that of almost normal, and the gradations are so slight that it really grades insensibly into the normal. It is quite obvious in what way mental deficiency unfits for military service. The mental defective cannot understand or carry out properly anything but the simplest orders. He is very easily confused, lacks initiative, is easily frightened, and may cause or spread a panic; he will be of no value in sentry duty, in fact, he will be a direct menace to his organization rather than a potential benefit. It will be found, however, that some of the higher grade defectives can be used in the service. The labor battalions can use a considerable number. The combatant troops may have a very few among their number.

While all cases of mental deficiency should be carefully graded to determine the extent of their defect, it must not be supposed that the question of the individual's acceptance or rejection will depend solely upon his mental age. The problem is a little more complicated than simply doing a Binet test. The points to be considered in determining whether the mental defect is fitted for service are his mental age, his physical age, his physique, his willingness to work, and whether he is

of a social or asocial type. It is clearly evident that a strong, healthy, obedient defective will be of more value to the service than one of slightly better mentality who is less strong physically and of the asocial type.

The best plan for determining the presence of defectives is undoubtedly the method devised by the Division of Psychology of the Medical Department for all recruits during the two-week retention period. These tests were applied, up to November 1, 1918, to approximately 1,500,000 men. As far as I can learn, these tests have not been published, but they consisted of three systems of tests; the first known as Alpha, which is a group test for men who read and write English, and which gives a wholly objective rating; the second is known as Beta, and is a group test for foreigners and illiterates—like Alpha, it measures general intelligence; the third is the use of individual tests such as the Yerkes Bridges, and the Stanford-Binet, and the performance scales. As a result of these examinations, a man was classified as “a,” very superior intelligence; “b,” superior intelligence; “c+,” high average intelligence; “c,” average intelligence; “c—,” low average intelligence; “d,” inferior intelligence; “d—” and “e,” very inferior intelligence. Classes “d—” and “e” were usually found below ten years in mental age and Class “d—” men were commonly considered sufficiently intelligent for regular service, whereas Class “e” men were considered only fit for special organizations or entire rejection from the service.

A number of interesting conclusions have been drawn from these tests. Men below “c—” were considered unfit to be accepted for officers’ training schools, “unless they possessed exceptional power of leadership and ability to command.” Men below “c—” were rarely found to be equal to complicated paper work. Certain branches of the service were felt to be entitled to more than the ordinary number of mentally superior men, *e. g.*, the Signal Corps, Machine-Gun Battalions, Field Artillery, and the Engineers—“these organizations ordinarily have about twice the usual proportion of “a” and “b” men, and very much less than the usual proportion of “d” and “d—” men.” Another point emphasized is that unless a proper distribution of intelligence prevails among regiments, some companies will train much more slowly than others and thus retard the whole efficiency of the regiment. Thus the finding of too many low grade men in any particular company should serve as a warning to transfer a number of them. “D” and “d—” men are rarely suited for tasks which require special skill, resourcefulness, or sustaining alertness. It is also unsafe to expect “d” and “d—” or “e” men to understand and carry out written instructions properly.

The next class of cases are the psychoses. The principal types of psychoses are:

1. Psychosis with organic disease of the nervous system.
2. Psychosis with somatic organic disease.
3. Alcoholic psychosis.
4. Manic depressive psychoses.
5. Involutional melancholia.
6. Dementia praecox.
7. Paranoia, and paranoid states.

Needless to say, every case of active psychosis is incapacitated from military service of any kind. The question of study under psychoses is whether cases which have improved or recovered should be allowed to perform military service and, if so, to what extent. It may be said that the majority of these cases are unfit for military service of any kind, yet the custom of classing all such cases as unfit should be guarded against. Certainly many Regular Army Officers, who broke down with psychoses in the extreme hardships of the recent war, will become quite fit for full duty in a short time.

Illustrations

The case of Lieut. Colonel Z., second illustration given under Manic Depressive Psychoses, is an illustration of countless similar cases which occurred in the A. E. F., and which will become fit for full duty after they have completely recovered. It is a well-recognized fact that the psychoses of war are more benign than those of civil life and that a large number of cases diagnosed as, and presenting the symptoms of, dementia praecox while in the A. E. F., cleared up in a comparatively short time after reaching this country. Any picture of the different psychoses was so altered by the war that it became a common practice among the neuropsychiatrists to refuse to make a diagnosis of dementia praecox in the A. E. F.

The prognosis of all war psychoses is more favorable than that of civilian psychoses, and it will be found that the same rigid rules against military service, which should prevail against those having a previous psychosis in civilian life, should not hold toward those who have suffered a psychosis brought about from war conditions.

A few general rules may be laid down for study whether a case will be fit for military service. The points to be considered are: First, the age of the individual; second, his physical condition; third, the type of psychosis from which he has suffered; fourth, the number of attacks; fifth, the completeness of his recovery; sixth, his insight into his condition; seventh, his personality; eighth, does he really desire military

service? All cases giving a history of a previous psychosis should be sent to hospital under the care of trained neuropsychiatrists, where a careful history and full examination can be secured and the patient kept under observation until a decision is arrived at. The type of psychosis will, also, materially determine whether the individual will be capable of military service. Certain types will practically preclude any possibility, whereas other types will allow one to estimate all the factors mentioned above in determining the question. It must be borne in mind, however, that this is an individual problem, and each case must be judged on its individual merits.

Under "Psychosis with organic disease of the nervous system" would be included traumatic, senile, arteriosclerotic, and syphilitic psychosis, general paresis, Huntington's chorea, brain tumors, multiple sclerosis, paralysis agitans, epilepsy, etc. Practically all such cases can be at once excluded. Certain traumatic psychoses, with a long period of recovery, might be accepted; benign brain tumors, with successful operation, might also be accepted.

Under "Psychosis with somatic disease" are included drug and metal poisons, pellagra, infectious diseases, post-infectious psychoses, exhaustive deliriums, cardio-renal disease, and disease of the ductless glands. A considerable number of cases of this class may be fit for duty. Those cases which have had but one attack and that a good many years previously, with good health in the meantime, will probably do well, yet one should always bear in mind that these individuals have possibly less resistance than the normal. Cardio-renal diseases will, of course, depend on the condition of the heart and kidneys. In regard to ductless gland disorders, it is quite obvious that we know too little about these conditions to dogmatize and, therefore, we should adopt a very conservative attitude toward them; by this I mean we should be conservative about accepting such cases for service. The present war has produced a great many exhaustion psychoses, and the problem of exhaustion psychoses is expressly interesting for that reason. The following case is given to show how such a case may do in the war:

K. M. B., admitted April 23, 1916, aged 28, single.

Family history.—Father alcoholic and does not support family. Mother said to have been placid, but lately shows deviated behavior, together with a 4-Wassermann and organic neurological signs.

Personal history.—Early life uneventful. Healthy, bright, played freely with other children. Always stammered slightly. Graduated from college at 21, with honors. Then took two years' engineering course. Then worked for construction companies. Did fairly well. In July, 1915, took an important position in charge of construction work. Patient worked excessively and had heavy responsibility. Gradually broke down with insomnia, inability to concentrate, headache, loss of

weight. January to April, 1916, he spent in several sanitariums and was then admitted to Bloomingdale. On admission he was quiet, depressed, had ideas of reference, admitted having had auditory hallucinations. Had fair insight. Physical showed low blood pressure (105/57), left biceps, triceps, and knee jerks exaggerated, Hutchinson teeth. Blood and spinal fluid negative.

Patient continued about the same for two months, then made a suicidal attempt, became rather confused and delirious. Then continued depressed and apathetic until February, 1917, when he suddenly cleared up in a few hours and showed a relatively normal behavior. He was discharged April 26, 1917. Diagnosis: Toxic exhaustive psychosis.

On leaving the hospital, the patient enlisted in the Canadian Army. He, after several months, secured a commission in the Flying Corps of the American Army and after a period of training went to France. He went through further training in France and stayed up under things quite well.

On studying this case, we find that this individual was 28 years old, *i. e.*, he was sufficiently young to stand hardship. He was of good physique, having been a college athlete. He had had only one attack, with a fairly good recovery, and had quite good insight into his condition. He had a very reliable personality. He was anxious to do military service. It will be seen, then, that nearly all the factors, which we have indicated should be taken into consideration, were favorable in this case and his success in adapting himself to army life might be reasonably expected.

In alcoholic psychosis, it may be said that acute conditions, such as acute hallucinosis, delirium tremens, and pathological intoxication are no special bar to military service. If the individual has a defective personality on top of it, that must be taken into account, but acute alcoholism in itself should seldom constitute cause for rejection. The chronic alcoholic conditions, however, should be viewed quite differently. Any chronic paranoid state, Korsakow, or well-recognized deterioration should prohibit military service. Still, one should frankly recognize that a number of chronic alcoholics, with a mild degree of deterioration, made good soldiers.

In manic depressive psychoses, we may say that the majority of such cases should be considered unfit for military service. Yet a number of such individuals can be used in technical and non-combatant service. Here again, we must realize that it is the individual, and not the disease, that will decide us in the matter.

S. M., 31 years old, married.

Family history.—Essentially negative. Members are intelligent and slightly neurotic.

Personal history.—Normal childhood. Healthy. Bright. Graduated from Annapolis. Remained in Navy. Was capable and efficient. Following assignment to work which he considered very distasteful and some temporary marital troubles, he developed a severe attack of depression and attempted suicide. His

depression cleared up in a few months and he secured some insight. The marital troubles were satisfactorily adjusted and he was not returned to the distasteful work. He served at sea throughout the war and rendered efficient service.

Here we have a case of an individual of good stock, young, with a good normal make-up, capable and efficient, who developed a depression following some real difficulties of adjustment, and who gained considerable insight into his condition. Such a case would, of course, be of the most favorable type for service, and the good record made by this patient is not unexpected.

Lieut. Colonel Z., aged 41 years, married.

Family history.—Paternal stock is rather brilliant, inclined to over-activity, with considerable alcoholism. Maternal grandfather delicate and neurotic. One uncle is irresponsible. Two aunts present a manic depressive make-up.

Personal history.—Normal childhood. Healthy, strong, always rather quiet, a good deal of a plodder, graduated from West Point at 24. Had rather an uneventful army life. Kept steadily at his work. Had dengue fever in the Philippines. Married in 1907. About 1908 had amebic dysentery. He is said to have been subject to "blue spells" and any criticism by his commanding officer would cause such a spell. He was always regarded as stubborn. Yet, on the whole, he had a frank, blunt, open makeup. He went to France in May, 1918. Was in all the principal engagements and carried on exceptionally well. Was cited several times and has been awarded the D. S. C., Congressional Medal, and Croix de Guerre. On November 3, 1918, he was admitted to hospital. Was depressed, exhausted, sleepless, self-accusatory, inclined to misinterpret. Made several attempts at suicide. Evacuated to the United States and admitted to Bloomingdale Hospital in February, 1919, where he remained until October 9, 1919. His course was that of a rather typical manic depressive—depression with some features of an exhaustion. He had practically recovered when discharged.

This case illustrates a depression occurring from an actual war strain and in an individual whose efficiency and makeup would lead us to expect him to be capable of resuming his duties in the Army.

Involutional melancholia can be considered much the same as manic depressive psychosis, except that the individual is a good deal older and the prognosis is less favorable. We should be even more conservative about allowing these individuals to serve than manic depressives.

Practically all cases of dementia praecox, paranoia, and paranoid states can ordinarily be considered unfit for military service and discharged as soon as diagnosed. A few cases of the simple type of dementia praecox, with a good arrest might do in labor battalions, but aside from this it is not felt that any cases can be profitable to the army.

Illustrations

G. M., 34 years old, married.

Family history.—One maternal aunt had a manic attack at 32. Brother is alcoholic and worthless.

Personal history. Normal childhood. Healthy, capable, bright. Graduated from West Point. Continued in army. Married. Led usual army life.

In May, 1915, developed delusions of persecution. Said German spies followed him and shot him. Did many symbolic acts, practiced self-mutilation. Was in various hospitals. Finally, admitted to Bloomingdale Hospital in April, 1916. Under careful treatment and considerable analysis, he returned to a sufficiently normal condition to leave, and to any but an experienced psychiatrist would have appeared perfectly normal. After the war broke out he succeeded in getting reinstated in the army but soon broke down and was placed in the neuropsychiatric wards.

This case illustrates how a paranoid condition, even when fairly well arrested, tends to recur and unfit the individual for military service. It might be thought that this individual's years of life in the Army would make him more capable of adjusting to army life than to civilian life, but such was not the case.

F. T. L., aged 22, single.

Family history.—Slightly incomplete for three generations. Paternal line very intelligent and efficient. Mother nervous and high strung, and at present is in a sanitarium for involuntal condition.

Personal history.—Was strong and healthy as a child. Did well in public school. Entered college at 18. Completed the course in three years. During his second year in college became restless and wished to leave. A strong masturbation complex was uncovered. He then went on all right. During his third year, while wrestling, he was thrown and suffered a sub-luxation of one of the cervical vertebra, with partial paralysis of both arms. Recovered in six weeks and finished out his college year.

After finishing college he went to work in his uncle's machine shops. Did excellent work, but soon tired of the job. He drifted from one job to another, often got into controversies with his father and was difficult to manage. Developed ideas of self-reference. Felt attempts were being made to injure him. Was sent to Bloomingdale Hospital.

On admission he was clouded and confused, disoriented, hallucinated. Physical examination was negative. This condition cleared up in a few days, and he then showed an essentially hypomanic behavior. This condition cleared up in about a month and he seemed superficially quite normal, yet, underneath, he cloaked a strong feeling of resentment and a firm belief that attempts had and were being made to take his life. He remained in the hospital until March 20, 1917, when he ran away from his uncle, with whom he was walking. He never showed any evidence of deterioration, and to anyone meeting him casually he would appear perfectly normal.

He joined the army shortly after this, but broke down within a few months and was sent to hospital for his mental condition.

Here we have an individual of high intelligence, with, in many ways, a high degree of capability, with as good a chance to adjust as could be expected for any case of this type, yet he broke down as soon as he got into active service.

These two cases are typical of the reaction of all cases of their type and show the necessity of rejecting similar cases.

The psychoneuroses form the next group for consideration. Con-

cerning this group there will probably be greater difference of opinion than concerning any other. Psychoneuroses are such common and prevalent conditions, and yet so little understood, that a great diversity of opinion has arisen concerning them and, as would be expected, this diversity of opinion has spread to the question of the psychoneurotic in relation to military efficiency.

During the present war, an extremely large number of cases of psychoneuroses were treated in hospital and a great deal has been written concerning this subject. The psychoneuroses arising in war have been commonly designated as "War Neuroses" or "shell shock." This latter title has appealed not only to the lay-mind but to even a considerable number of psychiatrists, and the unfortunate use of this term has served to cloud the issue to quite an extent. If there is one fact clearly proven concerning the "War Neuroses," it is that they present practically no new features, that the physical effect of high explosives has had practically nothing to do with the causation of the condition, except in the production of emotional states. The myth of "shell shock" can be so easily disposed of that it is perhaps worth our while to devote a few words to it.

Practically all cases of so-called "shell shock" are among unwounded men; yet it is clearly inconceivable how the thousands of men actually wounded by the bursting of high explosive should fail to show the symptoms of so-called "shell shock." Since we have so many men wounded by shell explosions, with no mental symptoms, clearly a shell explosion is not the real cause of the so-called "shell shock."

One of the important problems to consider is whether the cases of war neuroses occurred among individuals already psychoneurotics, or at least strongly disposed toward a psychoneurosis, or whether they occurred among normal individuals. There is a good deal of difference of opinion concerning this point, but my own experience, gained from six months of study in a British hospital for war neuroses, and six months in the A. E. F., led me to believe that the vast majority of cases which got back as far as a base hospital occurred among predisposed individuals. Undoubtedly, a considerable number did occur among normal individuals, but these usually respond readily to treatment and are not a difficult problem to deal with. Certainly one finds that those cases most resistant to treatment are cases which give a positive history of some mental or nervous trouble. During the six months I spent in a British hospital, I studied very intensively a number of cases which had been in hospital for a period of from six months to three years, and in nearly every case it was clear, upon study, that the individual was markedly neurotic previous to being in the army.

In cases which were of recent origin and which responded at once to treatment, I usually found very little evidence of a positive history.

Illustration

A. L., aged 29, single.

Family history.—Negative.

Personal history.—No evidence of neurotic traits. Passed a normal childhood; played freely with other boys. Was of average intelligence. Always strong and healthy. Went to France in August, 1914, as one of the "Contemptibles"; did first-line duty from that time until September, 1918. He was in the front-line trenches a considerable portion of this time, even under heavy fire and in a number of severe battles. In September, 1918, he was blown up by a shell. He suffered from severe headache, slight dizziness, tremors, and a great deal of mental confusion. He conceived the idea that he was losing his mind and that he would become hopelessly insane. He was promptly evacuated to England and came under my care at Magull Red Cross Hospital within two weeks after the onset. In the first interview his condition was explained to him quite frankly, and he was reassured of any danger of serious mental disease. When seen two days later, he stated that he felt quite all right and was willing to return to duty as soon as he should be considered fit.

This case illustrates the contention that cases of war neuroses did appear among perfectly normal individuals. Certainly, any individual who spent over four years in the front-line trenches in France before break-down cannot be classed as unstable or neurotic. Likewise, this case illustrates how readily the war neuroses respond to treatment if they do occur among individuals of a good makeup, without any psychoneurotic tendencies.

In the A. E. F., over 90 per cent of war neuroses were returned to duty, yet one must examine these figures carefully to realize what is meant. In the first place, all these troops were examined by neuropsychiatrists before being sent to France. Bearing in mind the statement made previously that the difficult cases encountered in the British Army were those which had a previous history of a neurotic condition, it would appear that the high figures in the A. E. F. are not so much due to the method of treatment as to the fact that the difficult types of cases had been, to a large extent, eliminated in the examinations made at the camps. Thus, our figures on the incidence and curability of war neuroses are quite misleading compared with those of other countries unless one keeps this point in mind. Again, our figures tend to show that reliance on mere statistics is not advisable, as due to the method of neuropsychiatric examinations used in our army, war neuroses were of less frequency and more easily cured.

It will then be seen that a fairly rigid elimination of psychoneurotics is of marked benefit to the service, yet we must bear in mind that psychoneurotics are frequently among our most intelligent and capable

individuals in every branch of life. Among the highly trained professions, such as medicine, engineering, etc., there are found a great many psychoneurotics.

The problem of elimination can probably best be understood by a realization of what the defects of the psychoneurotic are. There are four principal classes of psychoneuroses: hysteria, psychasthenia, neurasthenia, and anxiety neuroses. The hysterical and neurasthenic types are much superior to the psychasthenic and anxiety types. The psychasthenic, from his peculiar indecision, phobias, and compulsive ideas, is never suitable for combatant service and should be rigidly scrutinized for even noncombatant service; similarly, the anxiety neuroses, which contain fear states, together with some compulsive behavior, unfit a man in the same way. Marked cases of hysteria and neurasthenia should be eliminated from the service, but mild cases are frequently very capable individuals and can be of great value in the non-combatant branches, and frequently, because of high intelligence and technical training, are suitable persons for the technical branches of the army. Yet, they are more predisposed to break-downs than the ordinary individual, and one must study them carefully to decide their capability. The remarks under psychoses, concerning how one determines whether an individual is fitted for service, can all be applied to the psychoneuroses.

A. G., 31 years old, married.

Family history.—Father died in an asylum. One sister is insane. Mother is neurotic.

Personal history.—Always nervous as a child. Easily upset and excited. Always had a number of morbid fears, one being a feeling that if he did not keep a strong grip on himself he would absolutely lose his self-control. He sustained a fractured skull when 19, and has suffered from headaches ever since. He was engaged in a small business when war broke out in 1914. Patient joined the British Army in February, 1916. He was sent to France in September, 1916, but had only been in France two weeks when he was sent to hospital suffering from "debility." In a few weeks he was out of hospital but was kept back of the lines until November, 1916, when he was again sent to the front. He broke down again and was sent to the hospital in December, 1916, again with a diagnosis of "debility." He was then returned to England. He was quite upset with air raids that occurred near the hospital where he was. After a year's stay in hospital, patient was again sent to France, in November, 1917. He was sent into the line in January, 1918, and broke down at Albert, March, 1918, and was again sent to hospital. This time he developed an aphonia which lasted for four months. This aphonia has recurred twice since.

This case illustrates the type of case absolutely unfit for army service and shows the consequences of using such an individual in the army. Although in the army nearly three years, he had spent over twenty months of that time in hospital and less than four months of that time had he been of the slightest service. The elimination of

such cases is, then, one of the most valuable things that neuropsychiatry can contribute to the efficiency of the Army.

Our next group are the organic nervous conditions, consisting of such conditions as epilepsy, chorea, internal glandular disorders, etc. Every case of epilepsy should be discharged as soon as diagnosed. The reason for this is so obvious that it is scarcely worth repeating. Epileptics seldom, if ever, have a normal makeup, they are difficult persons to get along with, and even in the noncombatant branches their value is very questionable. Furthermore, they never adjust as well to army life as to civil life and had best be left in civil life. The other organic nervous diseases can be treated on the same basis as the psychoneuroses, into which they grade rather insensibly.

Under constitutional psychopathic inferiority, we have all those individuals who are, on a constitutional basis, unable to make the normal adaptation to life. The most important types we have to deal with are drug habitues, inadequate personalities, emotionally unstable, sex perverts, the pathological liars, and the criminals.

Cases of inadequate personality and emotional instability should all be discharged as soon as diagnosed; they are of no value to the service and will make much better adjustment at home than in the army.

The drug habitue, the sex pervert, the pathological liar, and the criminal are all individuals of no value to the community; worse, they are a harmful influence and an absolute detriment. When discovered, such individuals should not be discharged from the army and returned to civil life; these individuals are all trouble breeders and are dangerous persons to the community. They may easily be made use of by spies and agitators, and, in the unsettled and troubled conditions prevailing during war, it is best to have them away from the community. They are, of course, not fit for any branch of the service.

What, then, shall we do with them? The best possible use to make of these individuals, who are seldom self-supporting, is to have a semi-prison camp. They can then be used somewhat similarly to convict labor; on farm work, road building, or some kind of factory work, erected in the camp, might be preferable. This would cause a large number of individuals who had been, and would remain, a burden to the community to become self-supporting. The camp should be under proper psychiatric officers and there should be excellent hospital facilities. All drug habitues would be treated for their condition, and taken from the drug used, this would also be of benefit to the future as a certain number of these cases would be cured. During the late war a plan of this kind, for drug habitues, was contemplated at Fort McPherson, Georgia, by the Surgeon General's Office, but it was never carried through.

Only one exception can perhaps be made, and this is the sex pervert among negro troops. The wide prevalence of sex perverts among negroes would make it seem that only in selected cases should such an individual be sent away from his organization to a semi-prison camp.

We have still left the problem of the conscientious objector and the malingerer. The conscientious objector is an old problem running through the ages. As far as history goes back we find individuals who, on religious or conscientious grounds, refuse to fight. No real satisfactory solution to the problem has been made, but a number of points of importance may be brought out. All members of a recognized sect whose teachings prohibit the taking of life under any conditions, should be exempted from combatant service, but should be required to serve in non-combatant branches, even if exposed to danger from the enemy. Such duty as stretcher-bearers, hospital orderlies, and work of that kind could well be done by these individuals. It is found that the well-recognized sects, like the Quakers, make little, if any, objection to this service, and it seems a satisfactory solution. Yet we do find that a number will refuse to do service of any kind. All these individuals should be subjected to a careful examination by neuropsychiatrists. A considerable number will be found to be cases of mental diseases. The following cases illustrate cases of this type.

Illustrations

H. H. P., 27 years old, single.

Family history.—Maternal stock rather neurotic. One uncle indolent; another alcoholic; one half-brother excessive in alcohol and sexually.

Personal history.—From childhood was "always nervous and easily excited; difficult to advise, emotional, high ideals, extremely conscientious." Always stammered and avoided strangers because of it. Eneuresis till 14. Afraid of the dark. Attended school regularly till junior year in college. Was very studious and usually at the head of his class. Masturbated considerably and had severe conflicts over endeavors to give up the habit.

In May, 1918, he was drafted against his wishes. He had been associated with a group of "conscientious objectors" for two months previous to this, and he made considerable objection to military service "on account of principle," stating that he hoped to establish a precedent for the release of other conscientious objectors. He was examined at camp and rejected with a diagnosis of "psychoneurosis." Following this, he returned home. Would have crying spells, and became depressed; tried a number of things from summer school to farm work, but was unable to carry on. Returned to college in September, 1918. Father died in October, 1918. Patient became worse, said he was insane, threatened suicide. Was taken to a sanitarium in December, 1918. Became very religious, read the Bible and talked on religious matters.

He was admitted to Bloomingdale Hospital May 3, 1919. He was restless, agitated, worried. Formal mental tests satisfactory. Physical examination negative except for tremor of fingers and enlarged thyroid. Under treatment patient improved steadily. He finally gained fair insight into his problems. He

realized the real motive back of his attitude as a conscientious objector and once said: "I know now, just as well as the world, the whole thing that made me think of being a conscientious objector was that I was afraid to die." He reproached himself and his family. He said his maternal grandfather had paid another man \$300 to take his place in the Civil War draft, and his father had left France to escape the Franco-Prussian War.

This case illustrates the true mechanism of the conscientious objector in many psychoneurotics and the need for regarding such cases as mental cases to be treated.

J. A., 32 years old, married.

Family history.—Essentially negative.

Personal history.—Nervous as a child. Cried easily. Often fainted. Very sensitive. Brooded a great deal. Belongs to the "Brethren," a sect much like the Quakers. He joined the Medical Corps to avoid combatant service.

Broke down gradually after fourteen months' service in France. Worried about his wife, who was a chronic invalid, and his inability to lead a satisfying spiritual life. "I would go back to France tomorrow if they would let me preach." "I think if I had found a meeting house for my own kind, I would have borne up." His breakdown came when he was told that all physically fit men in the Medical Corps were to be put in the Infantry.

This patient cleared up promptly on being promised discharge from the service as soon as he was well.

The mechanism in this case is considerably different from the one just previous, but illustrates the number of cases of mental disease found among the conscientious objectors.

These cases can best be treated by the neuropsychiatrists in hospital, and the classifying of a certain number of conscientious objectors as mental cases has a rather good effect in breeding a healthy contempt among other troops for this condition. If examination shows the individual to have sufficient responsibility, he should be treated as a criminal. The report of McPherson in the treatment of conscientious objectors of this type demonstrates the value of such treatment. A certain number of conscientious objectors are the result of lack of education or false education. A better standard of education throughout the country should rid us of this problem.

Malingering is a condition concerning which books have been written and which we can only touch on lightly here. It is a fact recognized by psychiatrists, but not apparently well recognized among other circles, that malingering is a very common condition among insane persons, and that even a confession of malingering obtained from an individual does not necessarily mean that the individual should be held responsible. As an example, when at Fort McPherson, Georgia, I saw a case brought to the neuropsychiatric ward from the guard-house because of "fits." After watching him in one such convulsion, it was obvious that he was shamming, and when accused he stopped in the middle of the convulsion and admitted it. Yet careful examination showed him to be a case of

dementia praecox of the paranoid type, suffering from auditory hallucinations, and considerably deteriorated.

It is a fact emphasized by a large number of psychiatrists that the more carefully one studies cases of suspected malingering, the fewer he finds. One of the best and simplest ways of detecting a malingerer is complete isolation so that he has no one to talk to, nothing to read, and nothing to smoke. Very few individuals can stand such a regime for more than a few days and will then confess. Any proved cases of malingering must be rigidly and severely punished as a matter of example to others.

Having selected our army in the best possible manner to eliminate unsuitable cases of mental or nervous disease or defect, how can we prevent further cases from occurring? As we have seen before, 12 per cent of the cases of mental or nervous conditions found by our neuropsychiatrists in the draft were considered fit for active service. Furthermore, no matter how carefully an examination is made, a considerable number of actual and potential cases will be overlooked. Accordingly as we make a careful examination and elimination of unsuitable cases will we have a low rate occur later.

In such a picked army, it will be found that those cases occurring will be largely war neuroses and that the psychoses occurring will be principally manic depressive and exhaustion states. It has also been noted that psychoses of war are atypical and offer a much more favorable prognosis than similar cases occurring in civil life. The best general rule for treatment of mental and nervous cases during warfare is that all psychoses should be evacuated to the rear as soon as possible, and even after recovery should not be returned to the front for quite a prolonged period. The war neuroses, on the other hand, are best treated near the front. Following this method of treatment, 90 per cent of our cases were returned to duty. The hospitals for war neuroses should not be made too attractive, nor the life of the patient too easy. While the presence of women nurses in wards is desirable, the tendency towards coddling and sympathizing with the men must be carefully guarded against. The neurotic craves sympathy, and there is nothing worse than to give it to him. The understanding of the war neuroses by medical officers at dressing stations will avert a number of potential cases. The man who is blown up or buried, brought to the dressing station, can often be worked out of his acute emotional state at that time by proper handling, when, if left alone and evacuated to the rear, he will develop any one of the numerous symptoms of a neurosis.

The French Army adopted somewhat the following system of treating neuroses. The conversion hysterics were treated close to the front; painful electricity and such methods were used freely. The anxiety

states, however, were evacuated to the rear, and treated with careful nursing attention to build up their condition generally. The anxiety states were not returned to the front in anything like large numbers.

The British Army tried various methods but never had any well-recognized system, and there was constant disagreement among different heads of the neuropsychiatric work in the British Army over the method of treatment, so that quite different methods were used at different hospitals.

In order to prevent the occurrence of mental or nervous break-downs among troops, there are certain things which are of value. In the first place, it should be understood, both by the troops and by the public in general, that while a break-down is not necessarily a blamable thing, it should never be looked upon in the light of something creditable. The experience of the British Army in awarding wound stripes for "shell shock" shows that anything which makes this condition more desirable attends to increase its prevalence. It should also be understood that a war neurosis which does not yield to treatment is never a creditable thing.

Bernard Hart, in his lectures on the war neuroses, said that the prevalence of "shell shock" in the present war was due to the fact that this was the first war that public opinion had ever expected it and allowed it. A proper education of the public in this respect should serve to prevent such a large number of cases from occurring.

Another point is that when the morale of troops is good, when they are winning, there are fewer cases of war neuroses. Thus, work which tends to keep up the morale of troops is of value from this standpoint.

As a preventive of defective nervous and mental states in the future, and their occurrence in our military forces, certain measures of a preventive or prophylactic nature may be advocated, which will be of value to the nation. First, the standard of education throughout the country should be raised so that every one capable of receiving it will be at least able to read and write and speak the English language. This will decrease the number of cases rejected on grounds of intelligence to a slight degree, and will facilitate in every way the work of the army. Second, a general campaign for mental hygiene throughout the country would be of value in decreasing the number of feeble-minded, insane and neurotic. Third, since 25 per cent of the cases of insanity in the United States are due to syphilis, a campaign directed at the prevention wherever possible, and the complete cure wherever acquired, will be of value. Fourth, the adoption of a system of universal military training will be of value because the individual will have been accustomed from childhood to the idea of performing military service, because the training will be given during peace times, and the adjustment required of the individual

will be less, hence there will be fewer break-downs, and the result will be more people capable of service.

SUMMARY

There are in the United States a large number of cases of mental or nervous disease or defect. This is shown by the fact that, out of every twenty men rejected in the draft, one man was rejected for mental defect and one man for mental or nervous disease. During the war every army had large numbers of cases of mental or nervous disease which markedly impaired the efficiency of the fighting forces. To secure the most efficient army possible, it is necessary to eliminate the mentally unfit as soon as possible, but to use available cases of mental or nervous disease or defect whenever possible and where best fitted.

To eliminate the mental defectives, the best way is to use the group examinations given by the psychologists to recruits. Such an estimate was perfected and used in our own army and is satisfactory. Border-line cases depending on their mental age, their physique, and disposition, may be fitted for service. The vast majority of cases with a history of a psychosis are unfit for military service. Those offering the best prognoses are: manic depressive, and infective exhaustive psychoses; acute alcoholic conditions, *per se*, are not a bar to service; chronic alcoholic conditions, if pronounced, or with paranoid tendencies, are. Especially should it be guarded against allowing arrested cases of dementia praecox and paranoia from entering the service. Every case must be judged on its individual merits and by a trained board of psychiatrists.

Of the psychoneuroses, all extreme cases are unfit for service. Psychasthenia and anxiety neuroses are the worst types; hysteria and neurasthenia are the best. Because of the high intelligence of many psychoneurotics, they are valuable individuals, and should be used, preferably in non-combatant service.

The conscientious objector and the malingerer are frequently cases of mental disease, and, if so, should be treated as such; if not, they should be rigidly dealt with.

To prevent nervous and mental diseases from occurring, the method used by our army in France is to be commended—and the method of treatment used is as good as has been devised. The public should be educated towards a truer understanding of the war neuroses in an endeavor to prevent their occurrence. In the future our army will be benefited in mental health and efficiency if the general education in the country is raised and English is universally known—if a program of general mental hygiene for the country is adopted; if syphilis is prevented and properly treated; and if a system of universal military service is adopted.

TRAINING OF THE ENLISTED MEN OF THE MEDICAL DEPARTMENT¹

BY LIEUTENANT COLONEL GUSTAVUS M. BLECH

Medical Corps, Illinois National Guard

(One illustration)

THE training of the enlisted personnel of the Medical Department represents an important problem of the future, because experience has shown that, no matter how able medical officers themselves may be, they will accomplish next to nothing without the assistance of qualified enlisted personnel.

The medical branch of the Army is a highly technical one; for this reason it may not be amiss to point out that the time has gone by when any recruit, found unfit for service in the line, was still considered good enough to be transferred to the Medical Department. Nevertheless I do not wish to be understood that in selecting recruits we should eliminate any who do not come up to a fixed standard of mental development, for the medical branch of the military service is functioning as any other military organization, and, accordingly, embraces activities which have no immediate relation to the care of the sick and wounded.

I believe that the recruiting problem for our services, be that for the Regular Army, the National Guard, and whatever other volunteer force shall be decided on when a definite military policy for our country will be a reality, will be best solved by a pooling system; that is to say, enlistments in the medical branches of our military forces should be direct and permanent service in that branch should be allowed only after a period of probation.

For the National Guard, at least, the selection of enlisted personnel for the regimental sanitary detachments, ambulance companies and field hospital companies is a comparatively easy matter. My experience has shown that medical students, and those following certain cults or medical sects, are not good material. The acquisition of a limited number of pharmacists and chiropodists is desirable.

In the National Guard recruiting is accomplished by personal efforts on the part of officers and enlisted men.

Occasionally one finds an unusually high class of young men, carefully selected. That this is not an ideal arrangement is illustrated by a personal experience.

When the Mexican Border Service mobilization compelled me to increase the strength of my field hospital company, I selected a few

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"rough necks." One of my noncommissioned officers came to me and pointed out that I was lowering the "social standard" of the organization. He was afraid the *esprit de corps* would suffer.

"Is this a mobile unit?" I asked my protester, by way of reply.

"Yes, sir."

"It is an animal-drawn outfit, is it not?"

"Yes, sir."

"Then whom of our boys would you select to drive the four-mule teams?"

There was no answer.

When we were stationed in the field off Fort Sam Houston we received some horses and mules that would have done credit to a Bolshevik cabinet, but not to a peaceful, ambitious, regulation-abiding field hospital. I thought I was fairly well posted in equitation and tried my luck—for a few seconds. Even a young officer who had lived on a ranch held himself in the saddle exactly four seconds. One enlisted man after another was given an opportunity to tame a broncho, with more or less equal results. Finally my triumph came. The latest recruit, who still spoke in the brogue of the western plainsman, got on, and, to the amazement of all, brought the balking animal back from the drill ground sweating, tired, tamed and respectful toward the drill regulations for sanitary troops.

On the other hand we suffered during our service in France from want of clerical help. I recollect that, when I was in command of a large base hospital in Bordeaux, I was keeping hot the wires begging Tours to send me a few men to help out in the record office. The clerks had been working day and night to evacuate thousands of sick and wounded and the grueling grind of the limited force caused me to become desperate. Tours directed a hospital about to be closed to send me a few clerks. When these arrived it was found that only one knew how to handle a typewriter and could spell sufficiently well not to require an ounce of ink per page for correction—as for the rest, they could squeeze the keys with one finger. Later the chief surgeon's officers confessed that they were combing the entire A. E. F. to secure a few clerks for their own headquarters.

We see, therefore, that in organizing hospital corps detachments we need a variety of trained men, and their training along military lines should be elastic enough to develop each class of recruits along their special qualifications.

To plan a general course of instruction so as to enable each and every member of the Medical Department to fill any and all vacancies is absurd. You cannot make a pharmacist out of a mule driver, and it

certainly would be better to teach the pharmacist subjects pertaining to his work and not waste his time with equitation.

The assignment of soldiers of the Medical Department to sanitary units or detachments requires a good deal of thought. Should a soldier once assigned to a regimental detachment be permitted to remain with such a unit only, or is it practical to interchange them, that is to say, transfer them from regimental detachments to ambulance companies, field, evacuation and base hospitals, and vice versa?

There can be no doubt that the interchange of personnel is highly desirable. It broadens the soldier's capabilities and, besides, there may be imperative reasons for exchanges. One man may be useless in one unit because of circumstances beyond his control and prove a valuable member in another unit. Then there is the eternal question of replacement of losses, etc. But to interchange enlisted personnel without reference to their special qualifications would be a grave error. We find a hint about this in the Tables of Organization. This, in my opinion, should be extended to meet all conditions of military life. It is not sufficient to list the personnel by military grades and occupations, *e. g.*, sergeant, first class, corporal, cook, farrier, mechanic, chauffeur, etc., but to specify such military qualifications as litter bearer, ambulance man, nurse, sanitary, etc.

In other words, we should determine whether men are suitable for service on the firing line, with frontal sanitary formations, or with the larger institutions of the service of the rear, and, once that has been determined, the training for each particular class must be carried through with logical sequence.

Recruits should be sent to a training depot for medical personnel. Here instruction begins with the infantry drill without arms. The men are taught military bearing, a few simple evolutions, a few simple exercises with the litter, the loading and unloading of ambulances, etc. The work should not be tiring. Routine duties in and around barracks, under the supervision of a trusted and reliable noncommissioned officer, will form the greater part of the work.

After a probation of about a month the recruit will be no longer a mere cipher in uniform but an individual betraying certain qualities, and now it will be easy to determine for what particular service he is best adapted.

Let us assume that it is believed he will prove most useful with a regiment. His qualification card should show: "Regimental litter bearer." Such a man will be useful also with the litter section of an ambulance company.

After definite assignment his instruction will consist of first aid,

with special reference to the arrest of hemorrhage, the application of extension splints, the treatment of shock, etc. Practical exercises will not be restricted to the application of tourniquets, splints, etc., in ordinary positions, but in the field under conditions of modern warfare.

Whenever his regiment or battalion is instructed in war methods, he and his comrades should accompany the line units in order to observe the methods of deploying as skirmishers, the taking of cover against enemy fire, the rushes, retreats, etc. He must be taught something about the trajectory of infantry and artillery arms.

Time was when a hospital corps detachment marched behind a regiment. When the battalions deployed for imaginary action, the medical detachments took litters, came to the carry, and at the word of command the squads took appropriate litter intervals to the right and left and followed the advancing rifles. A particularly militaristic medical officer or inspector would be delighted only when the litter-bearers marched forward in perfect alignment.

I am as fond of military display and, therefore, of "perfect alignment" on occasions of parade as anyone in or out of the service. I can even see something good in the much ridiculed and maligned parade step of the old German Army, but there is a time for everything, and in the field, especially when training for the serious business of war, such a display of military precision is as absurd and ridiculous as it is harmful.

Let me state the rôle of the regimental litter-bearers in these words:

The regimental litter-bearer on the firing line is an unarmed infantry soldier. Even his "medical rifle," the litter, is superfluous, especially on a flat terrain. His purpose is to render first aid and to collect the wounded. To accomplish this he must utilize the same tactics employed by the infantry. He must advance by rushes, reach the wounded, help them without exposing them or himself unnecessarily and maintain liaison with his comrades and the medical officer in charge.

The question of transporting the wounded to the rear comes up later when the tactical situation permits. This statement may be objected to as revolutionary and as contrary to the humane spirit of the medical service, and it may be held that the prime purpose of the enlisted personnel on the firing line is to litter the wounded back to the regimental aid stations, where the surgeons can administer scientific second aid. Painters have glorified the litter bearers carrying wounded to the rear while shrapnels are bursting in the air. My wife once remarked, when seeing such a picture, that the bearers must be brave, otherwise they would drop their wounded and run for safety.

"They couldn't," I replied.

"Why not?" she asked.

"Because the bearers and the wounded were killed immediately after the photograph for the picture was taken."

And that is the plain truth.

Nor am I stating anything new. Paragraph 643 of the Manual for the Med. Dept., U. S. Army (1917), says: "The detachment invariably accompanies its line unit in combat, rendering first aid to as many as possible of those who fall out without losing touch with the command."

In paragraph 647 we read ". . . the remainder of the detachment keep in touch with the firing line, tending the wounded as far as possible and conveying the helpless to the station, if practicable. If the enemy's fire is such that the wounded cannot reach the station, advantage is taken of trenches, ravines and other inequalities of the ground affording temporary shelter, and the wounded are brought in during intervals in the firing or after nightfall."

These few lines, couched in official language, speak volumes! The helpless are conveyed to the station, if practicable. How often will it be practicable? In trench warfare, nearly always; in open or mobile warfare on a flat terrain, very seldom. We have the official directions. The "how" of carrying out these instructions is not a simple matter and requires a good deal of instruction of our enlisted men. But this instruction must be of a practical character. The soldiers, after a brief theoretic course, should be instructed in medical maneuvers in the field. Half a detachment serve as wounded and are placed with all sorts of imaginary wounds in prearranged positions on the field; the other half are instructed to reach them under fire, to administer first aid under fire, that is to say, while patient and helper are in the prone position, and to drag their patients to suitable places. I use the word "drag" advisedly, for, in my opinion, the litter is not an ideal appliance in open warfare. I show you a simple piece of canvas with straps. Once a patient is placed on such a "sand-sleigh" he can be dragged away by one man over comparatively long distances. And while on this subject, permit me to point out that for service on the firing line the medical belt is not practical. In the first place, it does not hold enough dressings, and at the front the first aid equipment should consist of 99 per cent individual packets; in the second place, with the thick belt around one's waist, crawling is rendered very difficult. A strong, old-fashioned canvas pouch or hunting bag is, in my opinion, the ideal container for the first-aid materials for service on the firing line, since it can be slung over the back or side by one movement and does not interfere with locomotion, to say nothing of its affording protection against shrapnel balls.

In such exercises opportunity should be afforded each soldier to apply his theoretic instruction in: (1) Map reading, (2) leadership, (3) liaison.

Map reading in the medical department has been treated like a step-child. We do not demand expertness, but the ability to interpret a map, to find any point in a terrain, to know map and terrain direction by compass, is an elementary but vital thing.

As regards leadership, the noncommissioned officers of each detachment must not wear their chevrons simply for the purpose of drawing additional pay. These men should be instructed in estimation of situations.

I recollect that some years ago I was asked by a regimental surgeon to accept for my outfit an unusually well-trained sergeant with a view of recommending him for promotion, as I then had a vacancy.

I asked this soldier a simple question: "A battalion of four companies is on the firing line and has been for an hour. The attack by the enemy is not evenly distributed. Tell me in what company you would expect the heaviest casualties." He thought a good deal. Finally came this piece of ultra-strategic wisdom: "The company which faces the larger force."

I had to admit that the sergeant was right. But I asked him how he would determine that when the enemy is invisible to him. He did not know—that was the business of the medical officer in charge. Such a man is not a good noncommissioned officer, for he must have the ability to direct the movements of the men under him with tactical intelligence. The question of liaison is not difficult, provided the intervals between the men are not too great. In such cases instruction in signaling with whistles having a sound differing from that used by the infantry, or with lanterns giving off colored light in the direction away from the enemy, is of great importance.

The enlisted men of ambulance companies should be given similar training, to be able to assist the regimental detachments. Of course, a certain number will be so trained as to prove valuable at the dressing station, but the majority of each company must be able to do litter and ambulance work with technical perfection. As for those intended for hospital units—and by that I mean formations affording prolonged hospitalization—three groups should be organized, namely: (1) Ward orderlies, (2) administration soldiers, (3) mechanics.

For these there is a brief common course, consisting of military drill, map reading, tent pitching, sanitation and general discipline.

The administrative soldiers should be trained in army regulations, in clerical work with special reference to reports, requisitions, etc. Ward orderlies should be trained as male nurses.

The mechanics will be instructed in the handling of automobiles and trucks, in practical electricity, carpentry, etc. The specialistic train-

ing of assistants to radiographers, oral surgeons, anesthetists and the like needs no comment. The question presents itself whether it is wise to teach enlisted men subjects which properly come within the province of the female nurses. I have no fault to find with the nurse corps, but

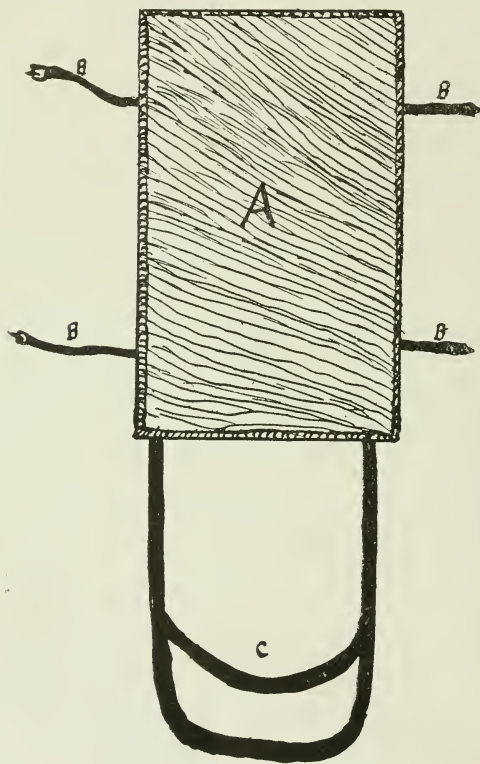


FIG. 1.—AUTHOR'S CANVAS "LITTER."

"A" Body partly enveloping patient. "B" Straps to fasten over body of patient. "C" harness enabling soldier-bearer to drag patient while crawling.

I am frank enough to say that women should not be allowed in the zones of activities. My experience in France has been that in the original Red Cross base hospitals the cultured and intelligent young men who had enlisted with the hospitals and who were assigned to ward

service found themselves out of a job. The nurses would not allow them to do anything but menial work, and the men longed for active service.

These men could have learned in a few months to do as good work as female nurses had they been given an opportunity, and discipline would have been maintained with ease, because nurses very often considered themselves capable of criticising ward surgeons, not realizing the difference between conditions of civil and military service.

We have a dearth of male nurses in the United States. It is considered a profession fit for women. The fact is, as you and I know, that there is ample room for good male nurses, and if the Army will afford adequate instruction and issue appropriate diplomas, these men would find useful fields in civilian general hospitals, hospitals for the insane, and in genito-urinary institutions.

With men adequately trained along the lines outlined above, we shall be prepared to render the best possible service, provided our medical officers can furnish the oil to make the entire machine run smoothly.

NOTE.—The author is indebted to the Gold Medal Camp Furniture Mfg. Co. of Racine Wis., for the manufacture of the "sleigh-litter" shown in Fig. 1.



EDITORIAL

SIR WILLIAM OSLER AND THE FIXED PERIOD

So much has been written in regard to Sir William Osler since his passing that it seems not inappropriate to dwell for a little while on what was a world wide misconception of his views—to correct an impression which was at entire variance with that which he believed.

Our brothers of the lay press are quick to seize anything which shall hold the public eye—shall serve as a catch caption to point a truth, or what they assume, often in hasty judgment, to be a truth.

And so, when Sir William delivered his valedictory to his friends and associates at Johns Hopkins University on February 22, 1905, the newspapers of the United States read into his address a meaning which was not there and credited him as serious in the advocacy of a policy of removing men after they had attained a certain sum of years. To “Oslerize” was made a verb, and there was a very general reaction against what was assumed to be Sir William’s advocacy of a very uncompromising euthanasia. No one seemed to stop to reflect on the absurdity of a man of Osler’s mentality considering seriously a doctrine, if we may call it such, which transgressed every law of mankind and humanity. The prominence of the speaker, and the very fact that in his address there seemed to be a flimsy nail on which to hang this acceptance of a theory, made good opportunity for readable “copy,” and both news sheet and editorial page made abundant use of it.

Those who were privileged to know Sir William Osler will remember him as a man of a delightfully whimsical humor and also of a very real and refined tenderness, and as such, the utterance, seriously, of the doctrine ascribed to him must always remain as an absurdity. The whole business had as its foundation Osler’s reference to the little known novel of Anthony Trollope, “The Fixed Period.” As this book is practically unobtainable at the present time we quote from it to show the general trend of the work and the vein of satire in which it was written. The following excerpt is quite characteristic of the style of the composition:

“What should be the Fixed Period?” That was the first question which demanded an immediate answer. Years were named absurd in their intended leniency—eighty and even eighty-five! “Let us say a hundred,” said I. aloud, turning upon them all the battery of my ridicule. I suggested sixty; but the term was received with silence. I pointed out that the few old men now on the island might be exempted, and that even those above fifty-five might be allowed to drag out their existences if they were weak enough to select for themselves so degrading a position. This latter proposition was accepted at once, and the exempt showed no repugnance even when it was proved to them that they would be left alone in the community and entitled to no

honour, and never allowed even to enter the pleasant gardens of the college. I think now that sixty was too early an age, and that sixty-five, to which I gracefully yielded, is the proper Fixed Period for the human race. Let any man look among his friends and see whether men of sixty-five are not in the way of those who are still aspiring to rise in the world. A judge shall be deaf on the bench when younger men below him can hear with accuracy. His voice shall have descended to a poor treble, or his eyesight shall be dim and failing. At any rate, his limbs will have lost all that robust agility which is needed for the adequate performance of the work of the world. It is self-evident that at sixty-five a man has done all that he is fit to do. He should be troubled no longer with labour, and therefore should be troubled no longer with life. "It is all vanity and vexation of spirit," such a one would say, if still brave, and still desirous of honour. "Lead me into the college, and there let me prepare myself for that brighter life which will require no mortal strength." My words did avail with many, and then they demanded that seventy should be the Fixed Period.

How long we fought over this point need not now be told. But we decided at last to divide the interval. Sixty-seven and a half was named by a majority of the Assembly as the Fixed Period. Surely the colony was determined to grow in truth old before it could go into the college. But then there came a further dispute. On which side of the Fixed Period should the year of grace be taken? Our debates even on this subject were long and animated. It was said that the seclusion within the college would be tantamount to penal departure, and that the old men should thus have the last lingering drops of breath allowed them, without, in the world at large. It was at last decided that men and women should be brought into the college at sixty-seven, and that before their sixty-eighth birthday they should have departed.¹¹

Using this as an illustration in his address already referred to and adopting the caption as the heading of his valedictory, he went on to enunciate his belief that the most effective work of thinking men is done before the age of forty and that after sixty there is little constructive work accomplished, although there may be much that is advisory. He used the text of Trollope's novel in a vein of gentle satiric humor to ease the pain of parting from those with whom he had so long been intimately associated in the development of so perfect an educational machine as that at Johns Hopkins. To mask, perhaps, his own feelings in severing the relations which had bound him closely to those who had striven with him in the perfection of the task which they had set themselves, he quoted whimsically from this work of Trollope. And the public at large, failing to understand the feeling which underlay the reference and the rather pathetic allusion to his own advancing years, could see nothing in his words save the heartless view of a very cold scientist who condemned man save as an actively producing machine. Thus to this very human savant was attached the stigma of the advocacy of the putting away of men when they had reached a certain age.

"The Fixed Period," which we have quoted, is a whimsical production in which the author takes up the question of euthanasia and in

¹¹"The Fixed Period"; Anthony Trollope. Tanchitz Edition, Leipzig, 1882, No. 2055, pp. 20-21.

a vein of rather grisly, sardonic humor shows the manifest absurdity of the whole pernicious doctrine. He creates a colony which is independent of Great Britain, the mother country, and pictures as president a fanatic who has as his controlling mania the idea of the final disposition of men who have arrived at a certain age determined by his advice and the enactment of law by the governing body. He (Trollope) traces the state of mind of a friend of the president who, under the statutory working, is to be the first to be suborned to the law. The situation is complicated by a love affair between the daughter of this friend and the son of the president, and not only the absurdity of the whole scheme, but the utter impossibility of arriving at any consensus of opinion as to when a man should be put away, is shown by dialogue and discussion among the various residents of the State. The work ends with the resumption of the possession of the colony by Great Britain, the readjustment of the legal code, and the deportation of the one-ideaed president to England, where it is assumed that he can work no further harm.

The whole thing is so fantastic that anyone knowing the book and also knowing that Osler had referred to it could not possibly have entertained any belief that he took it seriously. And so, for the error of having indulged his sense of humor in a medium which was not current with the generality of people, he was condemned to bear the censure of much of the reading public for having advanced a doctrine which was, as a matter of course, abhorrent to men, young or old.

In the preface to his volume of collected addresses, "*Æquinimitas and Other Addresses*," he says:

To this edition I have added the three valedictory addresses delivered before leaving America. One of these—*The Fixed Period*—demands a word of explanation. "To interpose a little case," to relieve a situation of singular sadness in parting from my dear colleagues of the Johns Hopkins University, I jokingly suggested for the relief of a senile professoriate an extension of Anthony Trollope's plan mentioned in his novel, "*The Fixed Period*." To one who all his life had been devoted to old men, it was not a little distressing to be placarded in a world-wide way as their sworn enemy, and to every man over sixty whose spirit I may have thus unwittingly bruised. I tender my heartfelt regrets. Let me add, however, that the discussion which followed my remarks has not changed, but has rather strengthened my belief that the real work of life is done before the fortieth year and that after the sixtieth year it would be best for the world and best for themselves if men rested from their labors.

It would seem evident in this that the heart of the man had been hurt and that he was wistful that he should not be adjudged as one who measured all men solely by the light of pure reason and excluded from the weight of his estimation all human elements of love and appreciation.

To those who were fortunate in knowing Sir William Osler personally there is little need for explanation of this sort. Any contact with him

was more than enough to make certain that, combined with the sure mind of science, with the keen perception of the highly gifted and trained intellect, there was so much of the intensely human that no such idea could even germinate in his being.

Unfortunately there are those who are forced to form their opinion on hearsay evidence—on what they read or have been told, and it is those who should know the real facts of the case.

It is quite true that Sir William believed that after sixty years a man was seldom a productive factor, as the following excerpt from his address of 1905 at Johns Hopkins shows:

I am going to be very bold and touch upon another question of some delicacy, but of infinite importance in university life—one that has not been settled in this country. I refer to a fixed period for the teacher, either of time of service or of age. Except in some proprietary schools, I do not know of any institutions in which there is a time limit of, say, twenty years' service, as in some of the London hospitals, or in which a man is engaged for a term of years. Usually the appointment is *ad vitam aut culpam*, as the old phrase reads. It is a very serious matter in our young universities to have all the professors growing old at the same time. In some places, only an epidemic, a time limit, or an old age pension can save the situation. I have two fixed ideas well known to my friends, harmless obsessions with which I sometimes bore them, but which have a direct bearing on this important problem. The first is the comparative uselessness of men above forty years of age. This may seem shocking, and yet read aright the world history bears out the statement. Take the sum of human achievement in action, in science, in art, in literature—subtract the work of the men above forty, and while we should miss great treasures, even priceless treasures, we would practically be where we are today. It is difficult to name a great and far-reaching conquest of the mind which has not been given to the world by a man on whose back the sun was still shining. The effective, moving, vitalizing work of the world is done between the ages of twenty-five and forty—these fifteen golden years of plenty, the anabolic or constructive period, in which there is always a balance in the bank and the credit is still good. The young men should be encouraged and afforded every possible chance to show what is in them. . . . And herein lies the chief value of the teacher who has passed his climacteric and is no longer a 'productive factor, he can play the man midwife as Socrates did to Theaetetus and determine whether the thoughts which the young men are bringing to the light are false idols or true and noble births.

My second fixed idea is the uselessness of men above sixty years of age, and the incalculable benefit it would be in commercial, political, and in professional life, if as a matter of course, men stopped work at this age. . . . The teacher's life should have three periods, study until twenty-five, investigation until forty, profession until sixty, at which age I would have him retired on a double allowance. Whether Anthony Trollope's suggestion of a college and chloroform should be carried out or not I have become a little dubious, *as my own time is getting so short.*"²

Although it is true, as we have said, and is evidenced in what is quoted above, that Sir William believed that after sixty years of age a

²Italics ours.

man was not a productive factor, it is emphatically untrue and altogether unthinkable that he ever believed in, thought of, or suggested that practice which came so unfortunately into prominence as "Oslerism."

JAMES ROBB CHURCH.

SOME RECOLLECTIONS OF SIR WILLIAM OSLER DURING THE WAR

It was my good fortune to be detailed in May of 1918 as Chief Surgeon of Base Section No. 3, of the American Expeditionary Forces. The duties of this position involved, among other things, the establishment and maintenance of hospitals for American troops in England, and we provided hospitalization amounting to about 9,000 beds, prior to October, 1918, at which time my connection with the activities was suspended. During this period I saw Sir William Osler frequently, and it was always my outstanding impression that I must marvel at the energy, activity, and interest which he showed at his time of life, and under the stress of his enormous work in England, in everything which in any way related to the medical care of American soldiers. These faculties seemed to have a particular application to military medicine, which of course was at that time, both in England and France, the outstanding line of the endeavor of all medical men. It is needless to say that his consultation work with the British Army and public was very great, but it was very evident that he placed so thoroughly at the front any call which came to him, whereby he might be put into touch with the activities of the American Medical Department.

As I apprehend his bent at the time, there was no circumstance connected with the medical welfare of our troops which did not get from him a precedence in his daily work, and which resulted in his being always present at any function which connoted the effort to better the state of our men hospitalized in England. I never gave him an invitation to go to one of our hospitals, which were widely scattered, that he did not eagerly take it, to the great delight of everybody who was fortunate enough to be the beneficiary of the visit. He frequently came with his very charming lady. I recall very well a day we spent going by motor to Dartford, about 20 miles from London, where the King's County (Brooklyn) Base Hospital Unit No. 37 (Lieut. Col. Edward Fiske) maintained a large hospital of 2,500 beds. The day was delightful from the point of the natural setting, and the sunshine in the hospital was made the more acceptable by the delightful presence of the great medical man, as he walked through the wards, cheering the patients by the charm of his cordial and jovial wit, which he dropped so spon-

taneously. Soldiers' comments on his visit, had he known them, would have justified so vastly his effort in having come.

It was characteristic of him that immediately upon going into one of these hospitals, he would take the commanding officer by the button-hole, and with an assumed censorious air, say to him: "Show me your laboratory! If you haven't a good laboratory, you have a bad hospital, but I am sure you are too energetic an American doctor not to have a good laboratory." Then he would begin the propounding of questions as to the pathological study carried on in the hospital, and if there were deficiencies in the laboratory section it is needless to say that this attitude of mind on his part got an immediate reflection into the mind of the man who was running the institution, and the laboratory followed in the march of things.

As I have said, the untiring and ever-ready quality in Sir William was to me remarkable, but not more so than the astounding range of his knowledge of medicine, and of surgery, too, as revealed in conversations with him. I am sure I talked to him on no subject in any way relating to the medical sciences that I did not at once get an inspiring response.

I recall very well another delightful visit which he made to Winchester to contribute a bit to a Medical Officers Clinical Society, which Major W. Jason Mixer of Boston had established among the officers at the large camp at that place. In the face of the worst kind of weather and surroundings by no means conducive to the comfort that three score and ten usually seeks for itself, he went to this meeting at Winchester and led a delightful symposium on medicine as found in camps. Weather or any other adverse influences did not in the most remote degree lessen his enthusiasm.

When we opened up our large hospital at Portsmouth, which was in charge of the Albany Base Hospital Unit No. 33, commanded by Capt. (afterwards Lieut.-Colonel) Erastus Corning, Sir William went to the inaugural exercises, raised the American flag over the institution, and made an address which was calculated to instill and foster a perfectly indomitable pride in every man who belonged to the unit.

I mention these several things as illustrations of the practical output, which represented the workings of his spirit when it met opportunities to exalt and benefit his beloved profession. It must be remembered that all during this period he carried with him the awful blight and sorrow, which comes to the man of his age, who had lost irretrievably the hope of his life, represented by the splendid son, who had been killed on the field of battle in France. I remember one day when we were driving together, he turned and said to me: "Man's greatest pleasures in this world are

of such uncertain tenure, and the moment wipes out the joy of the past and the hope of the future." I said, "I understand, Sir William, what you mean." He nodded and looked out of the window of the motor in which we were driving.

It is touching to recall a pathetic reference he made to me one day affecting his age. "Ah," he said, "if I were but a young man, so that I might take up, under modern conditions of knowledge and study, such a subject as neurological surgery. Think of the grandeur of such work when a fellow works up his case, does his surgery and is master of the entire field! How I wish I could start in, under the present state of specialized knowledge, and do work like that."

More I think, than any man I ever knew, Sir William seemed to me to realize the idea of a delightful living book. The alternations of deep wisdom with airy persiflage and subtle humor brought to my mind several times the notion that I was enjoying a living Addison or Doctor Holmes. The transitions and shadings of the "Spectator" and the "Autocrat" are no more diverting and charming than those same contrasts which one met in Sir William, and to the profound comment on blood pathology there would succeed so easily the delightful and mirthful story of himself or others. The scintillation was like sunshine on the wave crests of an ocean of thought. I doubt if any man ever shone with more charm than he at a dinner table, and the recollection of several occasions at the Athæneum (evidently his special club) and at other places in London is a heritage to those of us who were privileged to be present.

His home at Oxford was much of a Mecca to medical officers in England, and all the graces were to be found there.

It was sometimes surprising to me to see his manifestations of interest for individual medical officers, notably those who had been his old students. I had a number of letters from him, from time to time, telling me that Brown was a good chap in a laboratory, or that Robinson was a first class clinician. These certifications were most helpful to me.

Surely this gentle, forceful, inspiring man was ever on the quest of anything that might benefit and exalt medicine, and I hope he was as happy in the doing of the kindly and helpful act as he made those who were the beneficiaries of his soulful touch.

FRANCIS A. WINTER,
Colonel, Medical Corps, U. S. A.

ASSOCIATION NOTES

At a meeting of the Executive Council of The Association of Military Surgeons, April 21, 1920, the following names were proposed and elected to membership in the Association:

Medical Corps, U. S. Army

Colonels

James L. Bevans
George F. Keenan

Lieutenant Colonels

John W. Amesse
H. H. Rutherford

Majors

Frank E. Bellinger
Leonard A. Ensinger
David S. Fettes
Harold A. Fiske
Benjamin F. Hawk
Walter D. McKenna
Wilbur W. Ross
George W. Strough
Budd Van Sweringen
Charles Van Wood

Captains

Frank C. Abbott
Buford C. Bird
Morris H. Boerner
Leslie S. Brookhart
Paul G. Capps
Robert J. Campbell
William L. Crawford
Gordon T. Crozier
Henry C. Dooling
Dan M. Forbes
John C. Foshee
William F. Gabbert
Edward T. Gruetzner
Roy C. Gutch
John G. Harrington
Columbus Hyder
Frank C. Katherman
William C. Keller
John Logue
Arthur S. Love

Julian D. Lucas
Edward C. Lyon
Edward B. Macon
Alfred L. Malabre
Perry J. Manheims
Maxwell C. Montgomery
Frederick L. Morse
Nathaniel Palmquist
Marvin W. Reed
Walter R. Russell
Joseph Saylin
Marcel W. Sherwood
Brand Starnes
Albert B. Stuart
John L. Tierney
Henry G. Watters
Emory I. Whitehead

First Lieutenants

John F. Ahern
Hugh M. Barnes
Daniel J. Boland
John A. Bowles
Chester R. Brigham
T. M. Brister
Lester R. Brown
Amos Canfield
Allen Coburn
William T. Collins
Llewellyn J. Coppedge
George W. Cox
John L. Cruzen
William H. De Clark
Edward F. Dombrowski
Richard D. Dugan
Lawrence G. Dunlap
Richard S. Farr
R. Ernest Gilbert
William B. Goddard
James R. Gorman
C. H. Hoffhine
Benjamin H. Huggins
Leon C. Ives

A. E. Jones
Robert H. Lerce
Eli Levin
Benjamin J. Lewis
John H. Mallery
Donald E. McKenna
James A. McKenney
James P. McManus
Rudolph R. Miller
Elmer E. Mystrom
Willard Phipard
George P. Rawls
Robert K. Stewart
Samuel B. Thomas
John D. Thomas
Ronald M. Troup
William F. Weingart
John M. Wilson

Medical Reserve Corps, U. S. A.

Colonels

Walter A. Sherwood

Lieut. Colonels

Carl L. Barnes
Frank H. Paterson
James M. Washburn

Majors

Isaac N. Adams
Archibald A. Atkinson
William F. Bonner
John W. Christensen
John A. Conway
Van Cookerly
George H. Cruikshank
James C. Davis
Robert H. Gibson
William L. Hearst
Erik St. J. Johnson
Herman S. Judd

Majors

Edwin J. Lent
 James A. McDevitt
 Donald L. Miller
 Walter J. Nichols
 Arthur A. Pace
 Charles B. Reed
 J. Wm. Scales
 John B. Setzler
 Frank W. Shelton
 Clint C. Sourwine
 Ira C. Tyndall

Captains

Benjamin F. Adams
 George Alexander
 Frank P. Atkinson
 Harold F. Atwood
 Edward V. del Beccaro
 Henry M. Boies
 Edward J. Burns
 William H. Bennett
 James C. Carr
 Eugene J. Chesrow
 Donald A. Curtis

Carrell W. Downey
 Edgar W. Guilford
 Allen T. Moulton
 Jesse M. Pemberton
 John Prather
 George P. Sandrock
 William L. Waites
 Dr. James A. Young
 M.R.C., U.S.A.

U. S. P. H. S.

A. A. Surg. Fred H. Works

Medical Corps, U. S. Navy*Lieutenant Commander*

William H. Short

Lieutenants

Charles A. Ainslie
 Murl E. Fulk
 Lea B. Sartin

Medical Corps, U. S. N. R. F.*Lieutenants*

Thomas E. Conley
 John G. McPhail
 Joseph F. Montague
 Eiba B. Todd

Associate Members

Capt. Frederick W. Herms, D. C., U. S. A.
 Capt. William C. Williams, S. C., U. S. A.



COMMENT AND CRITICISM

REQUEST FOR INFORMATION

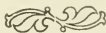
DUCTLESS GLAND DISEASES IN U. S. SOLDIERS DURING THE EUROPEAN WAR

Being interested in material on diseases of the glands of internal secretion in U. S. soldiers in our army camps and at the front during the European War, I should feel much indebted to any physician who has served as a medical officer in the Army during the war, who might be able to supply me with any information in regard to this matter, particularly statistical relations, semeiology, the incidence of these diseases in drafted men and in enlisted men who were subsequently on duty, and the measures taken in dealing with such cases. Any help that I may receive in this matter will be highly appreciated and acknowledged.

JAMES ROBB CHURCH,
Colonel, M. C., U. S. Army,
Secretary-Treasurer.

THE MODERN HOSPITAL CHANGES LOCATION

The Modern Hospital, having long since outgrown its former quarters because of the increasing service it is being called upon to render in the hospital field, has removed its offices to its own building at 22-24 East Ontario Street, Chicago, which will hereafter be known as The Modern Hospital Building.



BOOK REVIEWS

HISTORY AND BIBLIOGRAPHY OF ANATOMIC ILLUSTRATION IN ITS RELATION TO ANATOMIC SCIENCE AND THE GRAPHIC ARTS, by Ludwig Choulant. About 450 pages, Royal, 8vo, cloth. With one hundred illustrations. Advance Subscription Price, \$10.00. A memorial edition.

Dr. Mortimer Frank, B.S., M.D., began the translation and revision of Choulant's *History of Anatomic Illustration* in 1916. His life-long study of medical history and his interest as a connoisseur in medical engravings, fine bindings, and rare books especially qualified him for this undertaking.

Dr. Frank finished his task and turned the manuscript over to the publishers just before his untimely death on April 21, 1919. A committee of his friends has chosen this volume as a fitting memorial to Dr. Frank because of its intrinsic value as a contribution to medical science and because of its intimate relation to his personal interest and enthusiasm.

MODERN SURGERY, by J. Chalmers DaCosta, M.D., Samuel D. Gross, Professor of Surgery, Jefferson Medical College Hospital; Consulting Surgeon to Philadelphia General Hospital, St. Joseph's Hospital, and Misericordia Hospital, Philadelphia; Consulting Surgeon to the Hospital for the Insane, Eastern District of Pennsylvania at Norristown; Fellow of the American Surgical Association; Member of the Society of Clinical Surgery; Member of the American Philosophical Society; Membre de la société internationale de chirurgie; Commander, Medical Corps, U.S.N.R.F., etc., etc. Eighth edition, revised, enlarged, and reset with 1,177 illustrations, some of them in colors. Philadelphia and London: W. B. Saunders Company, 1919. Price, \$8.00.

Notwithstanding the statement of Doctor DaCosta in the Preface to this edition of his deservedly popular "Modern Surgery," that, because of the horrors of the war, "It was a dreadfully hard task to sit at a desk and revise a book; it was an utterly impossible thing to do it as it should be done," he has made a success of his undertaking.

There is no single-volume work upon surgery in which so much information can be found. Not only are surgical injuries and diseases well described, but judicious, safe advice is given. That which is old but tried and good, still representing contemporaneous opinions and practice, is retained; that which may be called "up to date," for example, the knowledge gained in the World War, is added. A criticism might perhaps be made that too many pages are given up to describing and illustrating methods and appliances now obsolete; for example, in that part of the book treating of gastric and intestinal surgery, it would appear that bone bobbins, decalcified bone plates, catgut rings, certain anastomosis forceps, etc., long discarded, scarcely have place in a "Modern Surgery." Yet, when one considers more carefully, it is recognized that the simpler and mostly safer technique of today has developed because of the principles upon which the former uses of these aids were founded. It would seem then, as is to be observed throughout Doctor DaCosta's unexcelled "Modern Surgery," that, purposely, enough of the history of surgery is brought out to carry on to the present an accurate chronicle.

For years "DaCosta's Surgery" has been the ready reference book of the reviewer and his students, and the eighth edition only adds to this confidence.

JNO. E. SUMMERS.

THE SURGICAL CLINICS OF CHICAGO, Vol. 3, No. 6, December, 1919, and Vol. 4, No. 1, January, 1920. Philadelphia and London: W. B. Saunders Company. Price, cloth, \$16.00.

These volumes continue to maintain the same high excellence of those that have preceded them. Particularly to be commended in the February number are the Clinics by Dr. Bevan, in which he ably discusses the subjects of Branchial Cysts, Intestinal Obstruction, Imperforate Anus, and a case of gauze sponge left in the gall-bladder—removal after an interval of eleven years. The cases presented and operated upon each had its practical lesson.

Dr. Wyllys Andrews' Clinic is interesting in that he operated upon a patient in whom the positive diagnosis of Cholelithiasis was made by radiograms. Although Dr. Andrews does not discuss the subject of the frequency with which gall-stones may be expected to be diagnosed by means of the X-ray, he does make the statement that "this (referring to his case) is one of the cases, probably a minority, which give positive findings in the radiogram." This statement is somewhat misleading as confirmation of X-ray diagnoses of gall-stones has, up to date, at operation, scarcely exceeded 10 per cent.

It is to be expected that improvement in X-ray technique will further increase the percentage, but the truth in an instance can only be solved by an operation.

Dr. Alfred N. Strauss has in this number the most noteworthy clinic that has appeared in these publications for some time. The subject of his clinic is Congenital Pyloric Stenosis. Dr. Strauss has had the rare experience of operating upon 103 of these unfortunate infants; only three have died. The supreme importance of fluoroscopy in the diagnosis is pointed out, and also the indications for surgical management. A number of good illustrations make plain the text in describing what impresses one as an original and excellent technique, justly credited as having life-saving advantages over the Rammstedt operation, which has a mortality in the most experienced hands of 15 to 20 per cent.

JNO. E. SUMMERS.

BOOKS RECEIVED

Books received are acknowledged in this department, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interest of our readers and as space permits.

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COLLECTED STUDIES ON THE PATHOLOGY OF WAR GAS POISONING, by Major Milton C. Winternitz, M.D., M.C., U.S.A., Professor of Pathology, School of Medicine, Yale University. New Haven, Conn., and 280 Madison Avenue, New York City. Yale University Press, 1920. Price, \$20.00.

Obituary

Those of our membership whose deaths have been noted since our last report are as follows:

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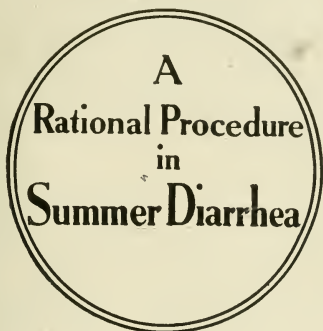
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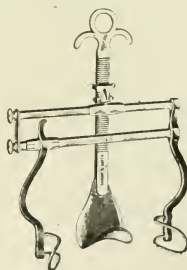
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Fig. 4—Pitcher, capacity 2 quarts.

Fig. 5—Dressing Jars, sizes $\frac{1}{2}$, 1, 2, $3\frac{1}{4}$ and 4 quarts.

Fig. 6—Irrigators, sizes 1, 2 and 3 quarts.

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Fig. 8—Funnels, diameter top, $3\frac{1}{2}$, $4\frac{1}{2}$ and $6\frac{1}{2}$ inches.

Fig. 9—Oval Seamless Tubs, sizes 11 and 16 quarts—17 and 19 in. long.

Fig. 10—Conical Mugs, sizes top, dia. $2\frac{3}{4}$, $3\frac{1}{2}$ and $3\frac{1}{2}$ in.

Fig. 11—Conical Tumblers, sizes top, dia. $2\frac{3}{4}$, $3\frac{1}{2}$ and $3\frac{1}{2}$ in.

Fig. 12—Dinner Plates, sizes dia. $7\frac{1}{2}$, $7\frac{1}{2}$, $8\frac{1}{2}$, $9\frac{1}{4}$ and $10\frac{1}{2}$ in.

Fig. 13—Soap Dish with Drain-er, size $5\frac{1}{2}$ x $4\frac{1}{2}$ x $1\frac{1}{2}$ in.

Fig. 14—Cups and Saucers, sizes, cups $\frac{1}{2}$ and $\frac{3}{4}$ pints; saucers $6\frac{1}{2}$ in. dia.

Fig. 15—Sputum Cup, size $3\frac{1}{2}$ x $3\frac{1}{2}$ in.

Fig. 16—Oval Trays, sizes 10 x $8\frac{1}{4}$ in., 12 x $9\frac{1}{2}$ x $1\frac{1}{16}$ in., 14 x $11\frac{1}{4}$ x $\frac{3}{8}$ in., 16 x 13 x $\frac{1}{16}$ in., 18 x 14 x 1 in., and 20 x 15 x $1\frac{1}{8}$ in.

Fig. 17—Round, Medicine Trays, sizes dia. 8, 10 and 12 in.

Fig. 18—Oblong Serving Trays, sizes $8\frac{1}{2}$ x $11\frac{1}{4}$ and $11\frac{1}{4}$ x $16\frac{1}{4}$ in.



Fig. 19—Pus Pans, Kidney Shape, sizes $6\frac{3}{4}$ x 3 x $1\frac{1}{4}$, 8 x $3\frac{1}{2}$, $1\frac{1}{2}$, 10 x 5 x $1\frac{1}{4}$, and 12 x 7 x 2 in.

Fig. 20—Basins, size $10\frac{3}{4}$ x $2\frac{3}{4}$, $11\frac{1}{4}$ x $2\frac{3}{4}$, $11\frac{1}{4}$ x $3\frac{1}{2}$, $12\frac{1}{2}$ x $3\frac{1}{2}$, $13\frac{1}{4}$ x $3\frac{1}{2}$, 15 x 4 , $15\frac{1}{4}$ x $4\frac{1}{2}$, $17\frac{1}{4}$ x $4\frac{1}{2}$ and $19\frac{3}{4}$ x 5 in.

Fig. 21—Brush or Instrument Tray, size 8 x 3 x $1\frac{1}{2}$ in.

Fig. 22—Eating Bowls, sizes 4 x $2\frac{3}{4}$, $4\frac{3}{4}$ x $2\frac{3}{4}$, $5\frac{1}{2}$ x 3 and $6\frac{1}{4}$ x $3\frac{1}{4}$ in.

Fig. 23—Sponge Bowls, sizes dia. by depth: 4 x 2 , 5 x $2\frac{1}{4}$, 6 x $2\frac{3}{4}$ in.

Fig. 24—Bed Pan, $18\frac{1}{2}$ in. long by 4 in. deep.

Fig. 25—Queen Bed Pan, 15 in. long over all, 12 in. wide over all, 4 in. deep over all.

Fig. 26—Instrument Trays, sizes $7\frac{1}{2}$ x $5\frac{1}{2}$ x $1\frac{1}{4}$, 8 x 6 x $1\frac{1}{4}$, $9\frac{1}{2}$ x $7\frac{1}{2}$ x $1\frac{1}{4}$, $16\frac{1}{2}$ x $10\frac{1}{4}$ x $2\frac{3}{4}$ in.

Fig. 27—Solution and Immersion Bowls, sizes 7 x 3 , $8\frac{3}{4}$ x $3\frac{1}{4}$, $10\frac{1}{4}$ x $3\frac{3}{4}$, $11\frac{1}{4}$ x $4\frac{1}{2}$, $12\frac{1}{2}$ x $4\frac{1}{2}$, $13\frac{1}{2}$ x $4\frac{1}{4}$, $14\frac{1}{2}$ x 5 , $15\frac{3}{4}$ x $5\frac{1}{4}$ and $17\frac{1}{4}$ x $6\frac{1}{2}$ in.

Fig. 28—Ceylon Tea Pots, individual, sizes $1\frac{1}{2}$, 2 and 3 pints.

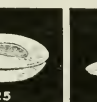
Fig. 29—Cuspidor, 7 in. dia. by 4 in. high.

Fig. 30—Cream Pitchers, capacity $\frac{1}{2}$ pint.

Fig. 31—Male Urinal, seamed, capacity 1 quart.

Fig. 32—Female Urinal, seamed, capacity 1 quart.

Fig. 33—Bed or Douche Pans, Seamless, size $15\frac{1}{4}$ x $11\frac{1}{4}$ x 3 in.



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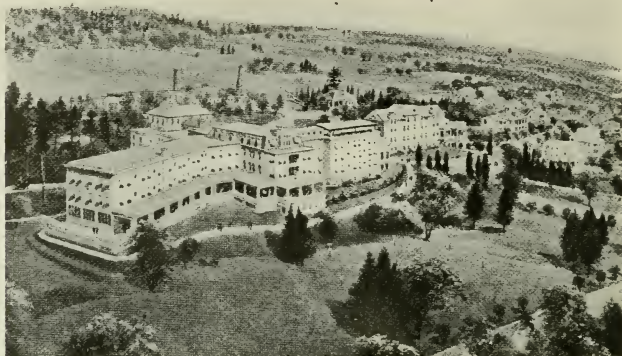
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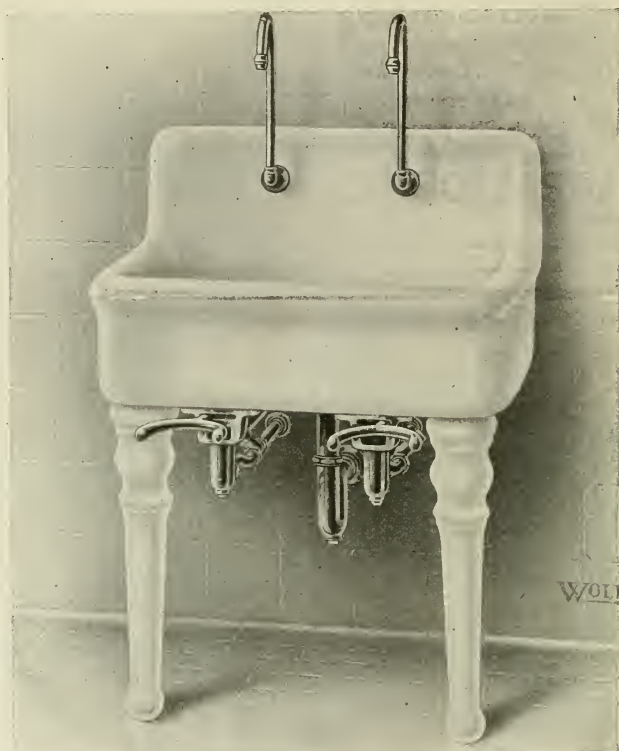
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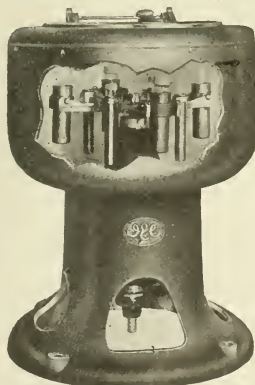
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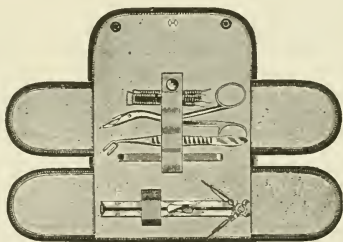
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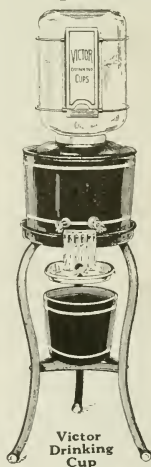
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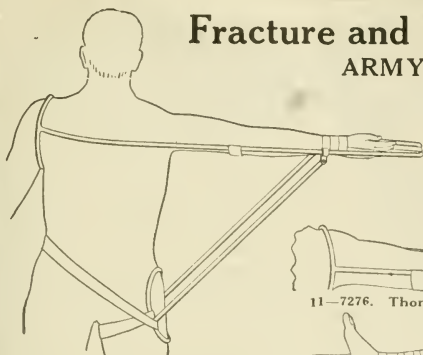
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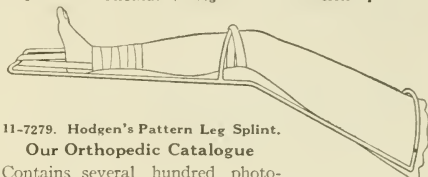
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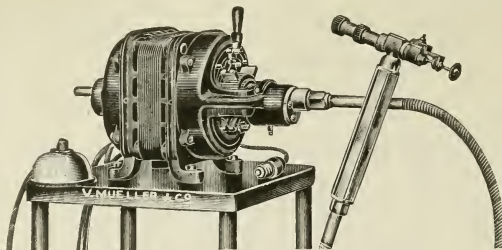
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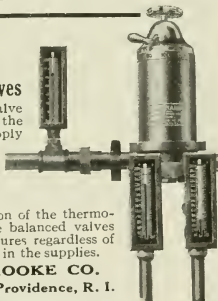
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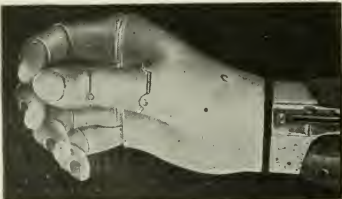
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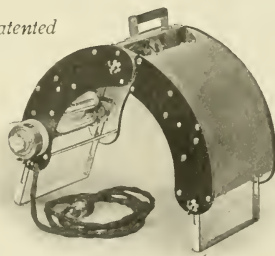
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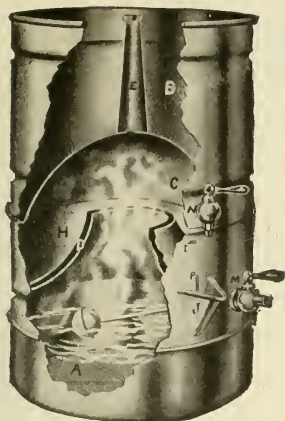
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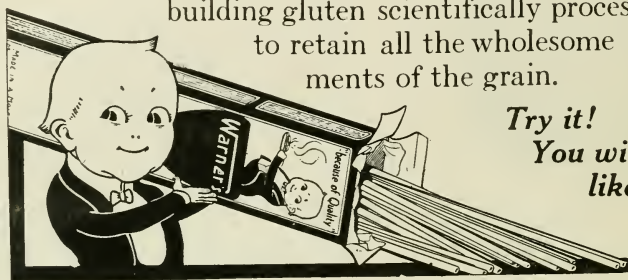
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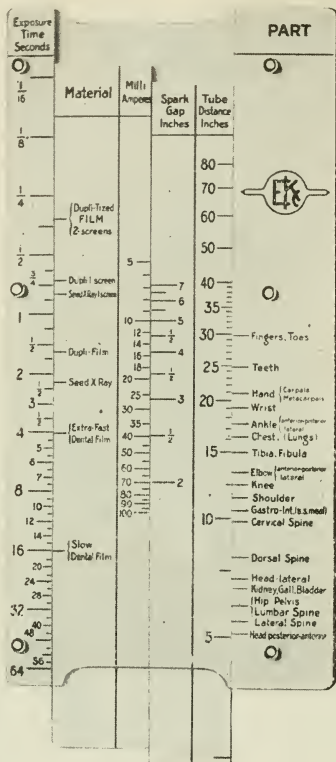
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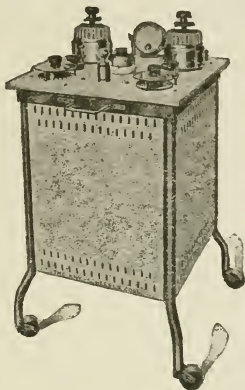
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